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PHONE (SSB)--3866 kc. Tuesday 8 PM
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Sunday -- 12 Noon (3866 kc.)
Tuesday-- 14270 kc. at 5:30 PM

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First Wed. each month at 8 PM

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COVER STORY ....

This most unusual picture of the long-wave antenna at RCA's Rocky Point transmitting station was taken Jan. 24, 1925 during a solar eclipse. Photo from Alan Douglas.

What's Coming Next!

in the "Old Timer's Bulletin

Collecting Hallicrafter Equip.
Collecting Early Batteries
Testing Unusual Tubes
History of James Millen Co.
Armstrong's Super-Regen set
Tuska Receivers
Light Bulb Development
A 1932 Transmitter
plus much, much more.....

In Memoriam

RALPH YEANDLE, W2IK
LEWIS CLEMENT, K4UV
BILL GIBSON, W7BVV
ART TRAUFFER
KEN RICHARDSON
MIKE WHITE

COMING EVENTS

ANTIQUE WIRELESS ASSOCIATION

MEETINGS
SOUTH CAROLINA (Charleston) South-East Conference April 18-19
INDIANA (Auburn) April 18-19 I. H. R. S./AWA Spring Meet
CALIFORNIA (Foothill College) C. H. R. S./AWA Spring Meet, May 3
NEW YORK (Holcomb) Spring Meet, May 3
MINNESOTA (Minneapolis) May 30, 31 Upper Mid-west Regional Conference
NEW YORK (Buffalo) Summer Meet, August 16
NEW YORK (Canandaigua) NATIONAL CONFERENCE, Sept. 25-28
OTHER ACTIVITIES
NEW YORK (East Bloomfield) Museum opens May 4
NEW YORK (Rochester) May 17 ARRL State Convention- Exhibits
WASHINGTON (Seattle) July 25-27 National ARRL Convention- Exhibits
NEW YORK (Canandaigua) Annual Business Meeting, Nov. 2
FLORIDA (Clearwater) A. R. R. L. Convention, November
NEW YORK (East Bloomfield) Annual Christmas Party, Nov. 29

HOUCK AWARD NOMINATIONS

The time has come again for members to select nominees for the HOUCK AWARDS. There are two Awards: One for Historical Documentation and the other for Historical Preservation. Give serious consideration as to your selection and send names to the Awards Committee:

Robert Morris, Chairman
Sunset Lake Road, RFD #1
Sparta, New Jersey 07871

Important

Notify AWA treasurer immediately of change in address. P. O. Dept. will NOT forward 3rd class mail. There will be a $1. charge per issue by AWA for forwarding 3rd Class mail.

From the President:

Charles Brelsford

At the Directors' Meeting last November the Board voted to increase the annual dues from five to six dollars per year. This is the first change in dues since 1974.

1979 was a good year for A.W.A. The *Old Timer's Bulletin* continued to be an outstanding compilation of historical information and news items. More than three thousand persons visited the Museum in East Bloomfield. On-the-air nets and the Old Time Transmitter Contest involved many participants. The Annual Conference and regional meets were successful. Our membership increased to more than 2,000.

As we all know, the cost of materials and services has increased greatly over the past five years. By the use of volunteer help and discretionary expenditures we have kept the impact of inflation at a minimum. However, since the price of paper, ink and labor has gone up and it has become necessary to use more paid assistance in the preparation of copy for the printer, the cost of publishing the **Old Timer's Bulletin** has increased.

Two other items have affected our cost of operation. One of these is insurance on the contents of the Museum. Insurance rates have increased and the value of items has appreciated. Also, we have more to insure. Another cost we are experiencing is that of additional storage space. At present we are renting extra space, but more is needed to store many items, both large and small, which we have acquired recently. I have appointed a committee, with Bruce Roloson Chairman, to locate and make recommendations for additional storage facilities.

Your Officers and Directors will continue to conduct the affairs of A.W.A. in an efficient manner but the increase in dues is necessary. The new dues structure will be:

	U. S.	U.S. & Can.	Foreign	
With OTB	3rd Class	1st Class	Surface	Air
One Year	$ 6.00	$ 8.00	$ 8.00	$10.00
Two Years	$12.00	$16.00	$16.00	$20.00

New or renewal membership received prior to June 1, 1980, will be accepted at the 1979 five-dollar base rate.

IN THE NEWS

Washington, D. C. --Edwin Howard Armstrong is being inducted into "The Inventors Hall of Fame". More in June.

LAST VISITOR TO MUSEUM

The doors of the AWA Museum were closed Nov. 1 Various artifacts were packed away while others were carefully dis-assembled and placed in winter storage. The 1979 season was over and Grote Reber's name (from Tasmania) was the last entry in the Guest Book. Not so.

A telephone call in late November from Dr. Finn (Smithsonian) asked if the building could be opened temporarily for a visitor from India ?

Reluctantly, yes-- it would be bitter cold since the heat had been turned off on the upper floors and the equipment not presentable.

Another phone call on Dec. 7 -- this time from the Rochester Science Museum -- the visitor was there and most anxious to see old radio equipment... Sometime later a car pulled into the driveway and there was S. Ramaoorthy, Director of the A. P. Science Center, Secumderabad, India.

In no time I found he was a fellow radio amateur (VU2SRJ) and very active in the historical radio field. A quick chilly trip through the Museum, a warm cup of coffee and I had a new friend. He confided in me that his two daughters were also hams: VU2JIX and VU2RMZ. Need I tell you that VU2SRJ is now a member of AWA ? ---BK

NBD - OTTER CLIFFS

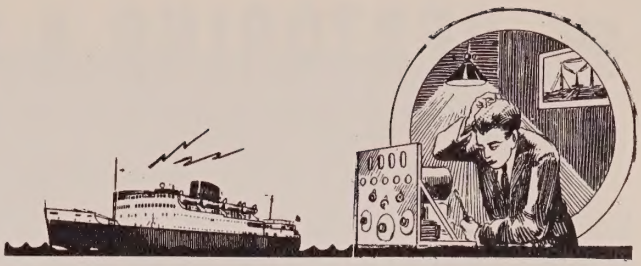
Much has been written and reported on this famous WWI Naval station near Bar Harbor, Maine. The latest reference is a lengthy record written by Herb Hovenden and four companions who were stationed at the site. An interesting documentation. A Copy is in the AWA archives and available to members.

The GERALD F.J. TYNE AWARD

Starting this year, a new Award will be given at the Annual Historical Conference to a member who has made an outstanding contribution to vacuum tube history. Mr. Tyne, the Association's vacuum tube historian, has agreed to allow AWA to use his name. Committee members and guide lines for the ward will be announced in the June Bulletin.

NEW MEMBERS

who are (or were) with electronic communication or industry:



Harold King (W8DJI) Chief Eng. Military Defense Proj.
Charles Anderson (Commercial oper.) Sperry-Rand Corp.
John Siau (WB2APU, x-8ODY) Gen. Elec. transmitting tube division
Vernon Clifford (W2SN) I. T. T. and Kuras-Alterman Corp.
George Thompson (K4RHC, x-1JTI) Radio Corp. of America
Richard Milton, Fed. Aviation Adm.
Elizabeth Zandonini (W3CDQ) National Bureau of Standards
Garfield Patterson (ex-WlPZH, K3JDE) Merchant marine operator
C. Friend Stafford (W2AAU, x-8AAU) Stromberg-Carlson and G. R. S.
Tom Richmond (WB2IEY) Harris RF Communication
Thomas Willard, U.S. Army Sig. Corps
Paul Deitrick (WB8TEH) Physics Instr.
Edward Martin (K8GQQ) Supreme Radio Labs
James Hawes, Stations WRPN, WSUI, and KSUI
Charles Klawitter (W9VZR) Radio teacher
Ralph Ernstein (W6SPQ, ex-8PAK, J8AAA) Mfg. Rep. Field Eng.
Wilbur Kupfrian (W2BVA, WA4LSJ) Kupfrian Mfg. Corp.
Nick Andriatch, Majestic & Admiral
Doyle Gann (K5WOB) Military communication
Jerry Hoffert, Ball Radio & TV Co.
Arthur Oldendorf, G. E., WPTR, WRGB
Eric Shalkhauser (W9CI, ex-9AHO, 9XAF) Pres. Radio Mfg. Eng. Inc. (RME)
John Glaze (WØAKW, ex-5VM) A. T. &T. Microwave, etc.
Bill Dunford (WlPJZ) Commercial operation, Director Research R. C. A.
Charles Fisher, Signec Instruments
Howard Goldberg, (W2IEK) Arrow Electronics, Harrison Radio, etc.
Richard Groshong, Collins Radio Corp.
Thomas Linton (WA3NBS) Electronics design engineer
Paul Hartman (K4FAF) Nat. Bureau of Stds. (Propogation Lab)
James Hayward, Canadian National Science Museum
Emory Swanson (W6BEH) I. T. T. Gilfillan engineering
Stewart Tyler (WA4TUO) WLPM, WFOF
Jim Bedard (K2TRZ) Station WHLI
Eldred Holley (WB2TNZ) Beacon Electronics
Ben Murphy (W7AFJ) Broadcast engineer
Curtis Burgan (WA6MAV) USAF Communication officer
R. D. Newton (WB7FEM, ex-6SNT) American Tel. & Tel.
Wayne Graves, Collins Radio Corp.
Ben Crane, Raytheon Corp., Saunders Co.
George Rose (K2AH, x-4JS, W2BWX) R. C. A. vacuum tube division
Gaines Aldridge (W5GWF) Commercial ship operator
Francis Fuller (ex-WlOJC, W9IRJ) Eimac Co., R. C. A.
Troy Harper, Station KFJC
Bruce Howatt, Editor "Communication News"
George Michael, Stats. WHEB, WORL, WCOP, WGY, WGFM, WRGB, PBS-Tv
Michael Brown (KA9EDW) Delco Elect.
Dr. Joseph Braunbeck (Vienna, Austria) Telefunken Devel. Lab. and Museum of Technology
Art Ericson (WlNF) American Marconi Co., Independent Wireless, KFC, KFP, KGA, KKW, KNQ, NAD, NAE, VGY, etc.

AWA is now pushing toward the 2300 membership mark. The last two members in the professional field to join have interesting backgrounds: Dr. Joseph Braunbeck of the Austrian Museum of Industry & Technology. Prior to this Dr. Braunbeck was with the Telefunken Development Laboratories.

Art Ericson, WlNF is a real old time commercial operator. He built his first receiver (a coherer!) in 1902. Art worked for Amer. Marconi Co. from 1910 to 1917, was Inspector for Independent Wireless Co., Radio supervisor at the old Boston Navy Yard, etc. The number of ship/shore stations he has manned could fill a call book. Welcome aboard OT!

RESTORING A CRL PARAGON

and other topics

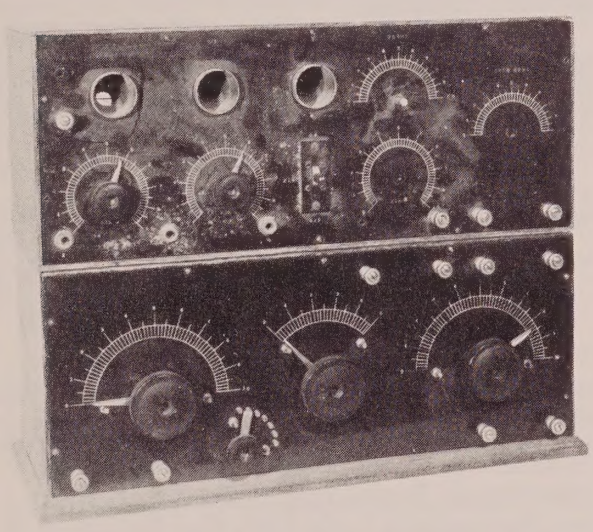
by Alan S. Douglas

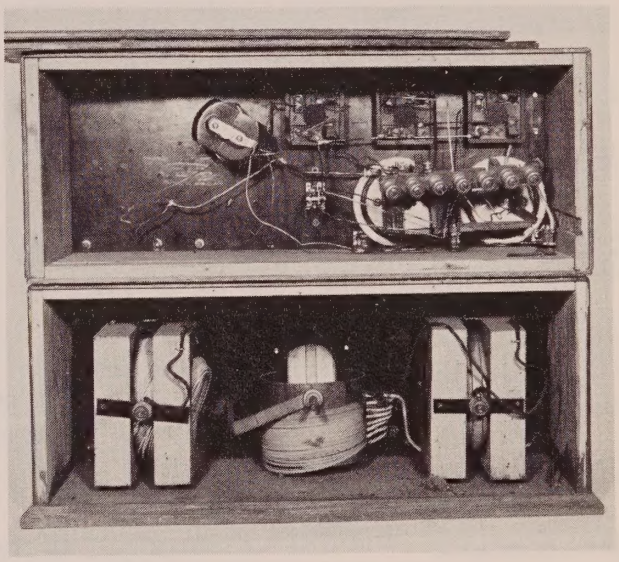
In the course of researching Zenith for a series of articles in Radio Age, I had been corresponding with a Phoenix man who worked for Zenith from 1922 to 1946. He mentioned in passing that he had recently QSO-d Jack W7--- who had told him he had an 'old CRL receiver' in his attic, and maybe I would want to follow it up. Probably a 3R or 4R from 1925, but what the heck, I might as well find out.

So I wrote to Jack, and yes, he did have the set, but hadn't seen it in twenty years as it was stored in his daughter's attic in Green Bay; he would be willing to sell it if he ever got back there to dig it out.

He sent me a snapshot of the set in its original location: the 1920 club station at the Milwaukee School of Engineering. When the school moved a year or two later, and the station was crowded out, club members parceled out the equipment and he ended up with the CRL.

In due time -- several months of sleepless nights - Jack did travel to Green Bay, dug the set out, and sent it here. Then the fun began. The tuner was in pretty good shape, but the amplifier had been entirely rewired and was a shambles (not that I was complaining!).





Front and rear view before restoration

At this point I had a choice to make. I could begin restoration immediately, and get the set working, not worrying too much about authenticity, or I could wait, try to dig up wiring diagrams and other information from other CRLs in existence, and make it as perfect as I could.

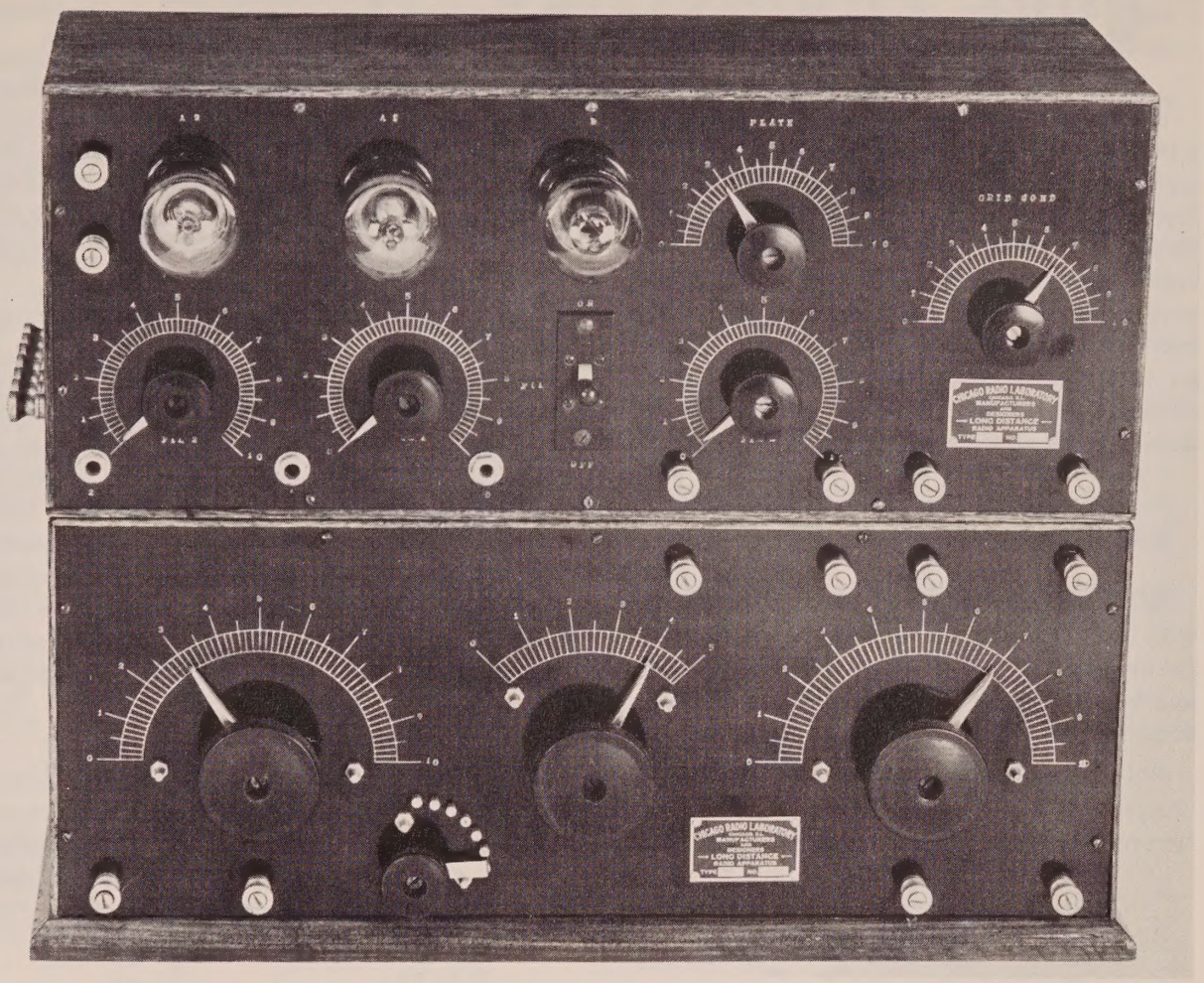
I decided to wait until I got the information I needed, but eventually had to compromise -- the only other amplifier I could locate was as empty as mine! So I installed as many interior parts as I needed to make the front-panel controls work, but did not attempt to wire them. If I ever locate a complete amplifier to copy, I can finish the wiring and interior; meanwhile, the set looks perfect from the outside.

As for specific restoration steps: I can describe some of the more obscure problems I faced. The most obvious was the missing nameplates. W0EOM very kindly sent me the plate from his Paragon so I could photograph it. Blowing up, retouching, and re-photographing it on Kodalith produced a full-size negative I could use to photo-etch new plates.

The original looked like cadmium-plated zinc, which I couldn't hope to duplicate, but matte-finished nickel came close enough. The actual processes are too complex to describe here, and require familiarity with printed-circuit etching techniques and equipment (by good fortune, I make pc boards where I work).

Briefly, I started with a brass blank, etched it to a dull finish, nickel-plated it, applied photoresist lacquer, exposed and developed the image through the Kodalith negative, etched through the nickel in the background areas to expose brass, chemically blackened the brass background, removed the photoresist, punched the mounting holes and legends, and sealed the plate with shellac. If this all sounds like a pain in the neck, it is -- it took twenty or thirty hours to make three or four usable plates.

Missing knobs were cast in black epoxy in a silicone rubber mold -- this technique was described in Antique Radio Topics, Vol. 5, No. 1 in 1975. I cut the pointers from brass plate with a jewelers saw,



Restored CRL Paragon receiver

then filed them to shape and nickel-plated them (if Hassel and Matthews could make them by hand, so could I). To replace two missing binding posts, I inveigled a machinist friend into knurling a piece of brass rod for me, then turned the posts freehand on a lathe, and nickel-plated them.

The cabinet finish was really decrepit -- half flaked off -- CRL must have used the cheapest grade of rosin varnish. A furniture-grade finish would look ridiculous on a set like this, so I just gave it a couple of rubbed-in coats of shellac to seal the oak.

There's nothing like owning a rare set to interest you in researching its background. Zenith's official history was reprinted in the Summer 1962 *OTB* (3-2) but it left a lot unsaid, and most present-day members have not seen it anyway. To unravel the confusion surrounding the name 'Paragon', here is the brief story:

The first short-wave (200 meters, that is) regenerative receiver was adapted by Paul Godley from Armstrong's long-wave circuits. Armstrong was interested only in commercial applications, and licensed Godley (who had bought into Adams-Morgan) to make short-wave tuners for hams. In the October 1916 *QST*, Adams-Morgan first advertised their 'Paragon' model RA-6.

R. H. G. Matthews had built some radio gear for his friends before the war. He and Karl Hassel met at Great Lakes Naval Training Station; in mid-1919 they founded the Chicago Radio Laboratory and issued their first catalog J-19.

Their major product at first was a detector/audio amplifier for use with the Adams-Morgan RA-6, which they called an Amplifigon (ugh!). They could not make tuners themselves, as they had no Armstrong license; instead they sold RA-6 Paragons. The RA-6 can be identified in old photos from the six binding posts at the bottom of the panel, as opposed to the later CRL models with four posts at the top.

CRL obtained their Armstrong license in May 1920, and immediately began advertising their own 'Paragon' in their new catalog J-20. These Chinese copies must have upset Adams-Morgan, who eventually stopped CRL from using the Paragon name.

The RA-10 replaced the RA-6 in October 1920. In February 1921 the RA-10 was advertised as the 'real' Paragon, and CRL re-named their tuner the 'CRL Regenerator,' and issued a new catalog F-21. By early 1922, Gene MacDonald had joined CRL and the old ham models were dropped in favor of the slant-panel broadcast models 1R and 2M.

-- Alan S. Douglas

CODE CURIOSITIES

by D. K. deNeuf, WA1SPM

It is not commonly known that the so-called "American Morse" code used so extensively throughout North American by landline telegraphers was not Professor Samuel F. B. Morse's first attempt at devising a set of symbols for conveying intelligence over electrical circuits. His first idea of a "code" was that a dictionary of words could be made up, giving to each word a numerical reference, such as Alabama 123; Alarm 322; Baltimore 507; etc. The dot-dash code used to represent each figure follows:

1 •— 3•••— 5••••• 7••••— 9••••—•
2 ••— 4••••— 6—••• 8———•• 0—————

Of course, a long list of words could be arranged with these ten numerals in different combinations but the long delays involved in composing messages and then translating them upon receipt caused early abandonment of this system.

Following this, Morse in 1838 devised his second telegraph code in alphabet form using dots and dashes as follows:

A •—	E •	I ••
B —•••	F ••—•	J •———
C —•—•	G ——•	K —•—
D —••	H ••••	L •—••
M ——	Q ——•—	U ••—
N —•	R •—•	V •••—
O ———	S •••	W •——
P •——•—	T —	X —••—
	Y —•——	Z ——••

It will be noted that the same symbol was given to G and J, to I and Y, and to S and Z. The decision as to use of the appropriate letter when transcribing was left to the operator.

It was not until 1844 that Morse, after studying letter "frequency tables" revised the code into one which a separate symbol for each letter and figure was employed. This third version was the code finally adopted and used by operators in the USA, Canada, and Mexico for almost a century. It was known as the "American Morse Code".

Much of Morse's problem with codes could no doubt have been eliminated if he had been aware of the work done by earlier scientists. Francis Bacon in 1605 in his work on cryptography devised a dot and dash alphabet - with one combination for each letter. He is credited with creating the first practical "code" which could have been used for telegraphy.

Other codes were developed for various purposes by Swain, Schilling, Gaus, Weber, Steinhill, and Bain, long before Morse came into the picture. Swain's code of 1829 was developed for "telegraphing along or through a wall" and he chose a "scratch" to indicate a dash, and a "tap" to indicate a dot. His code was commonly used between cellmates in prisons.

In the years 1849 and 1850 Bain's telegraph lines, employing an electro-chemical system recording on paper were operating between New York, Boston, Washington, and Buffalo, using the Bain code - one quite different from the one devised by Morse. (For reasons of space, we will not attempt to reproduce all of these codes.)

When the electric telegraph was adopted in Europe, the code Morse composed was not utilized, and the so-called "Continental" code was devised. This code, among other things, eliminated the spaced dots (for C. O, R. Y, and Z) and the long dash for L.

American Morse	Continental
A •—	A •—
B —•••	B —•••
C —•—•	C —•—•
D —••	D —••
E •	E •
F ••—•	F ••—•
G ——•	G ——•
H ••••	H ••••
I ••	I ••
J •———	J •———
K —•—	K —•—
L •—••	L •—••
M ——	M ——
N —•	N —•
O ———	O ———
P •——•—	P •——•—
Q ——•—	Q ——•—
R •—•	R •—•
S •••	S •••
T —	T —
U ••—	U ••—
V •••—	V •••—
W •——	W •——
X —••—	X —••—
Y —•——	Y —•——
Z ——••	Z ——••

This was imperative for the satisfactory use of the early visual "needle telegraph" instruments in Europe wherein a needle swung rather slowly between right and left positions to indicate dots and dashes. The Continental Code was adopted as a worldwide standard at the Telegraph Conference in Berlin in 1851.

American landline telegraphists however steadfastly refused to abandon their Morse code and replace it with the new one. There was more to their refusal than just habit or whim.

Technically the Morse code skillfully handled actually transmits information somewhat faster than when Continental code is used because of spaced dots being used in place of dash combinations for some letters. However, careless sending of

Morse is likely to produce a larger number of errors in reception than when Continental is employed.

Countries which employed an alphabet with symbols different from the Roman letter type used for example in English or French devised their own telegraph code to accommodate their particular characters on internal telegraph communications.

Introduction of the telegraph in China encountered a serious problem because an alphabet as such is not employed in the Chinese written language. Some 6,000 separate ideographs are employed in written communications, and the developing of a workable telegraphic code and the memorizing of it by operators was an impossible task.

Copy from Chinese Telegraph Dictionary

) 2071 2042 2030 2020 2010 1814 1752

0	2071	4416 禹	2030	1761 千	2010	1814	1713 弔
2	3029 毛	2043	0040 乏	2021	1103 壬	5268 致	1760
2	2073	1153	2033	7155	0987	1822	0796

The solution was the formation of the "Chinese Telegraphy Dictionary". Arabic numerals were assigned to the different Chinese characters. The regular continental code was used to transmit the figure groups over telegraph lines. (The figure group of 3492 for example might mean, in Chinese "We have sent today".)

This system is still in use today in many parts of China, but it is a laborious process to hunt for the proper characters in the dictionary in order to compose a telegram, and a similar chore for the recipient of a message to search out the meanings. The composing of an ordinary ten word business message often requires 20 minutes to code the information and a similar amount of time to decode it after receipt.

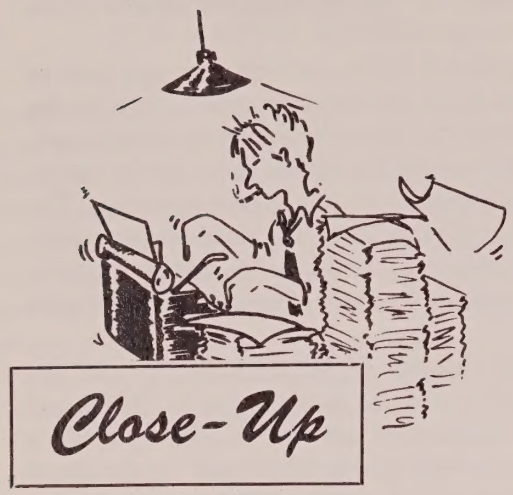
A small number of telefacsimile systems are understood to now be in operation in China, and eventual widespread use will probably provide a substitute for the special dictionary by the direct transmission and reception of Chinese ideographs.

JAPANESE

A	·–	ア	あ	HA	–···	ハ	は
I	··	イ	い	HI	···–	ヒ	ひ
U	··–	ウ	う	FU	––··	フ	ふ
E	·–···	エ	え	HE	·	ヘ	へ
O	·–···	オ	お	HO	–··	ホ	ほ
N	–·–·–	ン	ん	MA	–··–	マ	ま
KA	·–··	カ	か	MI	··–·–	ミ	み
KI	–·–·–	キ	き	MU	–	ム	む
KU	···–	ク	く	ME	–···–	メ	め
KE	–·––	ケ	け	MO	–···–	モ	も
KO	––––	コ	こ	YA	·––	ヤ	や
SA	–·–·–	サ	さ	(Y)I	·–	イ	い
SHI	––·–·	シ	し	YU	–··––	ユ	ゆ
SU	–––·–	ス	す	(Y)E	·–––·	エ	え
SE	·––·–	セ	せ	YO	––	ヨ	よ
SO	–––·	ソ	そ	RA	···	ラ	ら
TA	–·	タ	た	RI	––·	リ	り
CHI	··–·	チ	ち	RU	–···–	ル	る
TSU	·––·	ツ	つ	RE	–––	レ	れ
TE	·–––·	テ	て	RO	···–	ロ	ろ
TO	··––·	ト	と	WA	–·–	ワ	わ
NA	·–·	ナ	な	(W)I	·–··–	ヰ	ゐ
NI	·–·–	ニ	に	(W)U	··–	ウ	う
NU	····	ヌ	ぬ	(W)E	·–··–	ヱ	ゑ
NE	––·–·	ネ	ね	(W)O	·––·	ヲ	を

RUSSIAN			ARABIC			TURKISH	
А	·–	A	ا	·–	Alif	A	·–
Б	–···	B	ب	–···	Ba	B	–···
В	·––	V	ت	–	Ta	C	–·–·
Г	––·	G	ث	––··	Tha	Ç	––·–·
Д	–··	D	ج	·––·	Jeem	D	–··
Е,Э	·	E	ح	····	Ha	E	·
Ж	···–	J	خ	–––	Kha	F	··–·
З	––··	Z	د	··	Dal	G	––·
И	··	I	ذ	––··	Dhal	H	····
Й	·–––	Y	ر	·–	Ra	I	··
К	–·–	K	ز	––·–	Zay	J	·–––
Л	·–··	L	س	···	Seen	K	–·–
М	––	M	ش	––––·	Sheen	L	·–··
Н	–·	N	ص	–··–	Sad	M	––
О	–––	O	ض	···–	Dad	N	–·
П	·––·	P	ط	··–	Ta	O	–––
Р	·–·	R	ظ	–·––	Za	Ö	––·–
С	···	S	ع	·–·–	Ain	P	·––·
Т	–	T	غ	––·	Ghain	R	·–·
У	··–	U	ف	··–·	Fa	S	···
Ф	··–·	F	ق	––·–	Qaf	Ş	––·–
Х	····	H	ك	–––	Kaf	T	–
Ц	–·–·	TS	ل	·–··	Lam	U	··–
Ч	–––·	CH	م	––	Meem	Ü	··––
Ш	––––	SH	ن	–·	Noon	V	···–
Щ	––·–	SHCH	ه	····	He	Y	–·––
Ъ Ь	–··–	Mute	و	·––	Waw	Z	––··
Ы	–·––	I	لا	·––––	Lam-Alif		
Ю	··––	YU	ى	··	Ya		
Я	·–·–	YA					

FROM HEADQUARTERS



LATER THAN YOU THINK

A recent telephone call from a lady left me thinking. Seems her elderly father had sold his early Grebe receiver to a collector for $50. The collector had been bugging the old fellow for a couple years to sell the set. He finally gave in thinking he was a friend.

Shortly after he found the set was worth at least $250 ! The poor old guy was fit to be tied.. and started to brood over what happened. He called his friend (?), the collector to get his set back. No way. The collector completely ignored him and refused all future telephone calls. Someone told his daughter to "call Bruce Kelley, maybe he could help..."

What could I do.. a deal is a deal... but I do feel we should have some ethics when collecting. I marked the collector's name down in my little black book.

This brings up the subject of moving in on an estate shortly after the owner passes away. The vultures just sit and wait.. then pounce on the unsuspecting widow or relative and cleans her out. This happened to an AWA member a few years ago. A collector told the widow her husband had given him several choice items that were down in the basement. She gave them to him only to find out later that her husband hardly knew the man!

Moral: Itemize all your radio equipment NOW ! Give a copy to a relative or very close friend -- and most important, make out a will as to its disposition... it's later than you think!

WHAT IS A GRID-LEAK WORTH?

Scanning a recent QST "Ham-Ad" Column, something I've done for the past 50 years (yes, I joined the ARRL in 1929) I saw that a fellow was selling some old radio parts. Among the items were grid-leaks: $1. each. Now I know.

FINISH ON NATIONAL RECEIVERS

Stu Meyers, W2GHK, was restoring an old SW-3. The black finish just wouldn't clean up.. did I have any suggestions ? I've found a quick and easy method to make most early National receivers presentable (with black crackle finish) is to merely rub the surface with a cloth dipped in flat black Rust-Oleum. A small can be purchased at any hardware store. It has worked fine with a SW-3, FB-7 and an early HRO.

LRS RELAY AGAIN

AWA is very smug (and happy) that is has finally acquired a LRS Relay tube from W6GH. Almost.... During a recent qso on 75 with tube collector N4FS, a W2--- (call not given on purpose) broke in. "Say fellows, I just read in the December OTB Jerry Tyne's Tube Column about the LRS Relay. Which one do you have?"

This took me off guard since I didn't know there were two different types. He continued, "Look on page 237 of the Saga... there is pictured one made by Telefunken and another by Siemens & Halske." He then went on to say, "I have two LRS Relays here on my desk both of the Telefunken type. Kind of rare aren't they?"

Only a tube collector can appreciate this little story.....

EARLY A.C. SETS

A letter from Steve Thompson, a new collector, tells of problems with early AC sets: the rectifier tubes (usually a 80) turns red and the transformer hums or gets hot. Chances are it is an old electrolytic filter condenser shorted. The procedure to "fire-up" an early set is given on page 12 of the March, 1977 OTB.... A gentle reminder-- don't be too hasty in plugging in that old receiver. A "quickie" approach is to pull the 80 rectifier tube, turn on the AC --if the tubes light and no smoke.. the xmfr is

[Continued on next page]

RECENT RADIO and ENTERTAINER OBITUARIES

ASSOCIATION LOSES FOUR PARTICIPATING MEMBERS

ED REDINGTON (W4ZM): Ed's obituary has appeared in several publications including QST. One thing is always missing...that Ed was a fighter and had a great zest for life. Putting it simply... he was a great guy. He cannot be replaced.

ART TRAUFFER: Very little is known about this man: he lived alone in a small apartment. During the latter part of his life he collected DeForest artifacts which he gave to local museums, an act of self-denial and devotion to radio history.

LEWIS CLEMENT: One of the last great pioneers who became an amateur in 1905, a Marconi operator in 1914. He was the holder of many patents, had positions in W.E., Bell Labs, I.T.&T., Fada, Kolster, Fed. Tele., Crosley, RCA, etc., and was the recipient of numerous awards.

KEN RICHARDSON: Ken had his first smell of ozone at station "RX" in 1907. He was a commercial operator for the old United Wireless Company and American Marconi. With a lengthy career in radio, he spent his last years as Secretary of DeForest Pioneers Assn.

Benny Davis, Popular Songwriter

--Benny Davis, 84, in North Miami, Florida at the age of 84. While playing vaudeville at the outbreak of World War I, Davis sold his first song, "Goodbye Broadway, Hello, France," and went on to light up Tin Pan Alley with such hits as "Baby Face," "Margie," and "Carolina Moon."

MULLARD

Stanley Mullard [95 years] in England. Mr. Mullard was founder of the well-known and famous valve [tube] company of the same name. [Tudor Rees Newsheet]

Writer Art Trauffer dies

Traffer was found dead at his home Saturday morning.

He was a longtime free lance writer and photographer and devoted much of his time the past 25 years collecting materials connected with the late Lee DeForest, Council Bluffs born electronic genius.

Trauffer was an active curator, setting up Lee DeForest displays at the Western Heritage Museum and at Iowa Western Community College.

He also is credited with influencing the naming of DeForest School and the administration building at Iowa Western in his name.

Trauffer collected and restored antique radios and frequently contributed articles on radio and electronics to national magazines.

At the age of 40 he was considered one of the most prolific free-lance writers for Popular Mechanics.

He was a member of the National Antique Wireless Association and the Baha'i faith.

---

ok...replace the rectifier tube and again turn on the AC..watch for color in rectifier tube..if no pronounced blue (or getting red)..you're in business.. otherwise..turn off immediately for chances are you have a bad filter condenser. Replacement transformers are difficult to find.....

MUSEUM IN AUSTRALIA

Thumbing through a recent issue of the V.R.P.S. "The Reproducer" (P.O. Box 5343, Irving, Tex.) I found pictures and brief writeup on a large radio museum in South Australia: The Telecommunication Museum (131 King William St., Adelaide). The photographs indicate a very impressive display of early radio, telephone and telegraph equipment.... Definitely worth a visit if in the area.

STEADY STATE - NOT BIG BANG

Glancing through last year's Museum Guest Book is always fun: signatures of friends, strangers, collectors, housewives, engineers and dozens of wiggily scrawls of young grammer school children who had visited the museum. The last name caught my eye:

Grote Reber, Bothwell,
Tasmania, Australia 7411

The name brought back pleasant memories of a fall afternoon when the noted pioneer radio astronomer was in Rochester on a business trip. Chuck and Linc drove him out to Holcomb where he spent several hours looking at some of the more recent museum acquisitions.

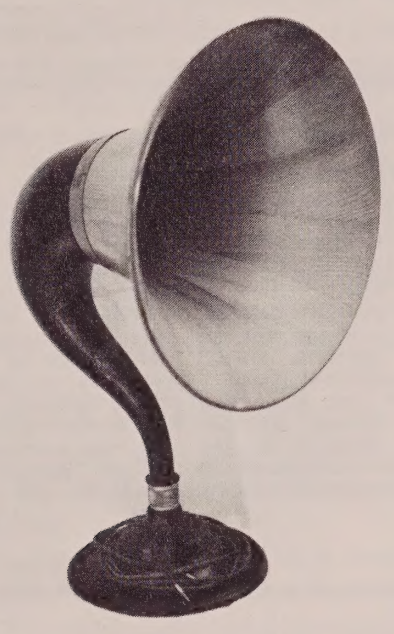
[Cont. on page 15]

THE WONDERFUL HORN SPEAKER

by Floyd A. Paul, W6THU

There has been a trend in recent years for collectors to specialize. Floyd's concentration on horn speakers is an excellent example. His original article [with more pictures] appeared in the CHRS Journal.
----C.Z.

The radio horn speaker era occurred primarily in the first half of the 1920's. In the years of 1921 through 1926 probably 95% of all horn speakers were designed, manufactured and sold. For a treatise on horn speaker design (including frequency response curves, discussion of driver mechanisms, and some evaluation and performance test results) see "Horn Speakers", by the above author in the March 79 edition of the *CHRS Journal.*



MOD. VI, Spruce Bell
Music Master Corp.

The author's collection has grown to over 32 different horns and a few are pictured in this article. A continued search of 1920's literature has produced a listing of over 230 manufacturers and over 400 different styles. See table 1 for listing.

Some observations about horn speakers follow. Materials used in the manufacture of horn speakers of the 1920's included but were not limited to the following: wood, compressed wood, laminated wood, stell, cast iron, sheet iron, aluminum, brass, ceramic, plastics, cement, fibre, rubber compositions and porcelain. Horns took a variety of shapes, some of which are shown in this article.

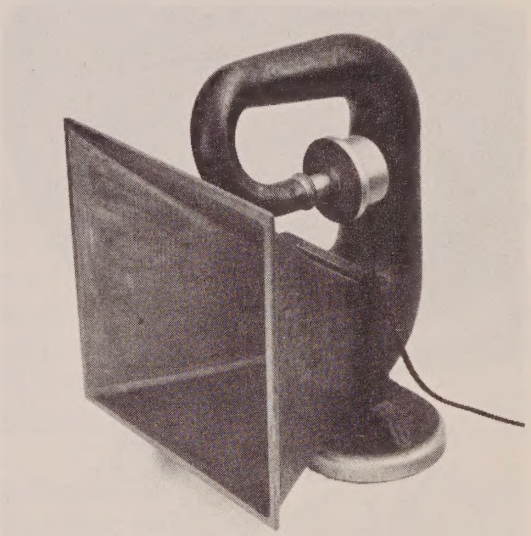
A few manufacturers tried imaginative and novel designs such as the use of sea shells (The Oro-Tone Company), amphitheater shape (Cook Radio Corporation), table lamps (several including Thor

Manufacturer	Model-Name-Number-Style
A-1 Woodworking Co.	T-1B
Ackerman	Aristocrat 21, 25, 2V, 10, 12, 14
Acme Appar. Co.	Kleerspeaker
Adler	100
Advance Elect.	Falck
Ajax Elect. Spec.	Jr., Marveltone
Aldine Radio & Mfg.	Microphone
Altone Mfg. Co.	—
Ambassador Sales Co.	—
American Art Mache	800, 801, 802 (Ref. Compressed Wood Corp.)
American Elect.	Burns 205B, D
American Hard Rubber	Radion
American Inter.	A, C
Amer. Radio Equip. Co.	—
Amplion	AR 102, 111, 114, AA18, AR15, 19, 39,43,45,61
Amplitone	—
Amplitron	—
Apex Elect. Mfg. Co.	Entertainer
Armstrong Co.	A, B, C
Astral Radio Corp.	—
Atlas-Colonial	101
Atwater Kent	H, L, M, R
Auth. El. Spec. Co.	—
Baker-Smith, Inc.	Sylfan
Baldwin	—
Bee-Zee Prod. Co.	Eyther-Way
Bel Canto	—
Bennett & Co.	Auditorium
Blood Tone Arm	B, C, D, E
Boissonault Co.	50, 60
Borkman Radio Corp.	Velvet 12, 15, Lantern #9
Boudette Mfg. Co.	Sonochorde
Brandes	Table Talker, H
Bremerman & Son	Orchestrian
Bristol	Audiophone S, J, Baby Grand, Baby, Sr., Jr., Cabinet
Callophone	R 1202
Cambridge Sanitary	Kirk
Cannon & Miller	Camco
Caris	100, 200, 300, 500, 600, 800
Chanson	—
Chicago Signal Co.	Temple
Clapp-Eastham	Electro-Ampliphone
Claravox Co.	S-4
Compressed Wood Corp.	804, 6, 7, 10, 21 (formerly Amer, Art Mache)
Connecticut Inst. Co.	CIC
Cook Radio Corp.	—
Cory & Son	Coryphone B529, 530
Cos. Rad. Ap. Co.	A
Curtis-Leger Fix. Co.	Cremona Midget, Jr., Deluxe
Cuseloid Co. Inc.	—
Davis, J. M.	Majestic
Davis, R. T.	Vogue 10, Cabinet
Deforest	—
Dexter Metal Mfg. Co.	—
Dictograph/Grand	Portable, Upright
Dietzen	JR-65
Donnell Mfg. Co.	Spirola
Dual L. S. Co.	Charmitone H-8, J-10
Dual Tool Co.	1, 1R
Duro Metal Prod. Co.	Quali-tone Jr., 2, 3, 4

Edelman Mfg.	Multitone
Elect. Products Mfg.	Dymac
Elect. Specialty Co.	—
Ever Hot Mfg. Co.	—
Exceltone Radio Mfg.	—
Federal T. & T.	Pleiophone, 180, 183
Federal Radio Corp.	S-40
Fiber Products Co.	Fibertone
Filterspeaker	3 CW
Finch Radio Mfg. Co.	Clarion
Firth	Nerl, Vocaloud
Florentine	—
Freed Eisemann	FE 50
Freshman	—
Frost	Musette 10B, 12S, 13M
G and G Radio Co.	Speak-O-Lamp
Gale Radio Labs	Towncrier
Gemco Mfg. Co.	27
General Radio Corp.	Geraco (See Music Master)
Globe Phone Mfg. Co.	—
Goldschmidt	W, S
Gottschalk	—
Graef & Trecartin	Graefone
Granolite Art Prod. Co.	1, 2, 3
Grassman Co.	—
Grigsby-Grunow-Hinds	Majestic BG, WG, 10, 20, 40, 45, 50
Guarantee Spec. Co.	Supreme 7
Halliwell Elect. Co.	—
Hamburg Brothers	Penn.
Hardsocg	—
Hart & Hegemen Mfg.	—
Herald Electric Co.	B
Holtzer-Cabot	112, 114
Inter-Ocean Radio Co.	Woodehorn
Isonic Co.	115, 116
Jewel Phonoparts Co.	—
Jewett Radio & Phono.	Superspeaker, Cabinet
Jodra Mfg. Co.	The Enchanter
Jolley Radio Co.	1020, 1225
Jones Agencies	Arex
Kellogg	Symphony 554, 557, 558, 559, 560
Kennedy Co.	200, 610, 920
Kent	Kentone
Kilbourne & Clark	K & C
King	Amplitone
Kirkman Engr. Corp.	Lafayette
Kodel	Microphone, Deluxe, Cabinet
Kor-Rad Co.	Lafayette
Lakeside Supply Co.	M, LP
Liberty Metal Prod.	Bean V25, Q26
Macy & Co.	Maco SR.
Magnavox	M1,3, 4, 6, 20, R1, 2, 3, A1-A1-r, A2-R, TS-2
Major Spkr. Co.	—
Malone-Lemmon Prod.	Table Lamp
Manhattan	2552, 2554, 2555, Symphonic
Marco Mfg. Co.	A, B, C, D
Master Radio Corp.	Throatype
Mazda Radio Mfg. Co.	Deluxe, Muzada-Phone
McKee Glass Co.	Radio Wonder
Mercury Radio Corp.	Deluxe, Grand, Jr.

Radio Division & Radiolamp Company), floor lamp (G & G Radio Company), and squared horn opening (several including Timbretone & Ovenshire). Some speakers took shapes of other objects. Timbretone made the base of their horn speaker like a violin, and Kodel made their whole horn speaker into the shape of a table top microphone. Some speakers utilized simple megaphone horns as speakers, such as Dual Tool Company and Radio Industries.

Some name changes occurred. Dictograph Corporation introduced a Dictograph horn speaker in 1922-23 and changed the name of the horn to Dictograd by 1924. Trade names or companies were merged or sold. American Art Mache was a horn manufacturer in the early years and became



Ovenshire Symphony Speaker

---BURNS 205---
American Electric Co.

(Cont. on next page)

THE WONDERFUL HORN SPEAKER

[Cont. from previous page]

Compressed Wood in November 1924. Music Master Corporation by 1924 (Feb.) was formerly General Radio Corporation which used the trade name "Geraco". Some unusual names were used in naming of horn speakers; "After Dinner" by Hart & Hegemen Manufacturing, "Re-Creator" by Rola, "Stradovox" by Sterling Cabinet and "Little Spitfire" by Tower Manufacturing.

VOGUE 10 Horn speaker
R. T. Davis, Inc.

To assist horn collectors in identifying manufacturers and their associated products by Model, Name, Number or Style a listing is shown in Table 1 which has manufacturers alphabetically in the 1st column and which has the most commonly known descriptive identifier in the second column. The second column does not repeat the manufacturer's name when that name is the only know description. A dash (=) in the model column indicates no specific identification by Name or Model.

Manufacturer	Model-Name-Number-Style
Mersman & Co.	Educator 10 (Canada)
Metro Elect. Co.	10, 14
Moe Mfg. Co.	Aladdin
Modern Equip. Co.	HD 2, HDS, HW 2
Montgomery Ward	Airline
Monumental Bronze Co.	Bridgeport
Moon Radio Corp.	Naturaltone
Morrison Labs Inc.	Mockingbird
Mozart-Grand	Baby Grand
Multiple Elect. Prod.	Atlas Amplitone 101, 102
Mu-Rad Labs Inc.	Audiphone (See O'Neil)
Murdock	500
Music Master	V, VI, VII, VIII, XI, X (formerly Gen. Radio Corp.)
Nat'l Radio Outlet	Kleertone
Newcomb-Hawley	—
Newberry Elect. Co.	—
O'Neil	Audiphone (formerly Mu-Rad)
Operadio Mfg. Co.	Sr., Jr.
Oro-Tone Co.	Seahorns
Ovenshire Labs	—
Paddack	—
Pal Radio Co.	917, 1021, 1123, 1324, 1420, 1524
Peerless Light Co.	Peerlite
Perfectone Radio Corp.	A-1
Piroxloid Prod.	A-1
Planet Radio Corp.	Plan-o-phone
Platter Cabinet Co.	Cabinet
Pollo	—
Porter	Alladin Lamp, 3, 4, 5, 6
Portola Radio Co.	1, 2
Quam Radio Corp.	Radiovox
Racon	Dwarf
Radialamp	Lamp Speaker
Radio Cabinet Co.	Orchestrion
Radio Corp. of Amer.	Radiola 1320, 1325, F-H
Radio Dist. Co.	—
Radio Industries	Rico, 115, 120, 250, Melotone
Radio Spkr. Co.	Baby Grand
Radiotive Corp.	Silvervoice
Rathbun	Claravox
Reichmann	Thorola 3, 4, S-5, 9, 421
Remo Corp	Trumpet, Cabinet
Rhamstine	Adapt-O-Phone
Rice & Hochster	Reflectone A, C
Riley-Klotz Co.	Arkay
Rithello Corp.	—
Robbins & Myers Co.	—
Rola	Re-Creator
Rollersmith	—
Rollersmith	—
Roth Radio Co.	Melodee 1, 2
Ryan	Richmond
Saal	Soft Speaker, Jr., Grand
Sadler	Trutone, Sr., Little Sr.
S-C Products Co.	—
Seaman Jones	—
Selector Co.	—
Sheltone	—
Signal elect. Mfg. Co.	Dragon
Snyder Mfg. Co.	—
Sonora Phone. Co.	Deluxe, Std.
Southern Toy Co.	Cabinet
Spartan Elect. Corp.	Bell, Cabinet
Splitdorf Bethleham	A, B, C, D
Standard Metal	15, 17, 114, Gem
Stanley & Patterson	Grand
Star Radio Co.	Star-o-tone, Gold Star
Sterling Cabinet	Strad-O-Vox
Stewart Warner	400,405
Stromberg Carlson	1A, 2A
Super Radio Repro. Co.	—
Tectron Radio Corp.	Resonata
Telephone Maint. Div.	Telmalco
Teleradio	A1, C1
Teletone	60, 62
Temple Inc.	11, 13, 15, 18, 65
Thompson	Magnaphone
Thor Radio Div.	Speaker Lamps

Close-Up [Cont. From p.11]

It had been many years since he had visited the AWA Museum.

We were then joined by Annie, the Town Museum's Director, for a leisurely two-hour lunch at the nearby Bloomfield Inn. Grote was a charming dinner companion.

After hearing about his recent travels, I asked about his latest radio astronomy work. He is in charge of a small radio observatory in remote Tasmania (south of Australia) where he is currently recording signals from outer space with a complex antenna array three miles long!

Unlike other radio astronomical observatories which concentrate their activities in the VHF/UHF range, Grote records all his work on 100 meters! He told us that observations on this low frequency are quite different than on the higher ones.

With a twinkle in his eye, he said, "At times I am beginning to believe in the steady-state theory, and not the big bang!" I wondered what was going through his mind. He wouldn't tell.

Grote was concerned about restoring Karl Jansky's original radio telescope as a historical exhibit. A few parts still exist at Greenbank. Would AWA help?

THIS BUSINESS OF DUES

I belong to several amateur, professional and collector organizations. Most send me a "dues notice" --others make a brief note somewhere in their publication that it is time to pay dues. If I overlook this important information -- I am no longer a member.

I wish all organizations would notify member/subscribers: the date due, who to make check out to and the treasurer's address...and of course the amount. Simple isn't it ? I bet lotsa clubs lose members by not following this procedure....

[Cont. on page 17]

Reprint Service

O. O. T. C. GROUP PHOTOGRAPH

Were you in the OOTC group photograph taken at the recent Conference at Canandaigua? If so, a beautiful glossy enlargement or a sharp color print is available for only $1. or both for $2. Send check to:

Al Crum, W2BWK
16 Costar St, Rochester, N. Y. 14608

SUMMER MEET

Dick Schamberger has made arrangments to have our Summer Meet at Buffalo's new Naval Park on board a ship! --this should be great fun and a new experience. There will be programming, food, etc. More in June OTB..the date: Aug. 16

--The Wonderful Horn Speaker--

Manufacturer	Model-Name-Number-Style
Timbretone	—
Timmons	Talkers
Tonks Bros.	Seatone
Tower Mfg.	Little Spitfire, Scientific Cabinet, Meistersinger
Triangle Elect. Trad.	Berwick
Trimm	Acousticola, 15, 20, 25, 50
80, 90	80,90
Trinity	A1, C2
True Tone Radio Mfg.	Concert Grand
Ultimax Radio Sales	—
Unger Doll & Toy Co.	A
Unger Radio Mfg. Co.	—
Union Spin. & Plate	—
United Radio	Peerless
Univ. High P. T. Co.	—
U. S. Elect. Corp.	USECO
Utah	Superflex 18, Standard
Van-le Corp.	—
Victor	R2334, R2335
Victor Sales Co.	—
Victory Radio	525, 530
Vincennes Phono. Co.	—
Vitalis Himmer	Vitalitone
Voluma Prod. Inc.	—
Warren Radio Phone	Jr.
Welty & Co.	A, B, C, M
Western Elect.	10D, 555, 193W, 521-CW
Westinghouse	Vocarola
White Beauty Elec. Co.	143, 146
Williams Radio Co.	Echotone
Williams Specialty	Loud-R-Tone
Wilson Utensil Co.	Moon
Windsor Furn. Co.	—
Winkler-Reichmann	Thorophone S5, 501
Wizard of the Air	Airex
Wizard Phonograph Co.	—
Work Rite Mfg.	Sr., Jr.
Wright-DeCoster	WD 101
Yahr-Lange Inc.	Pedestal type
Zinke Co.	—
Zisch Eng. Corp.	

THE AUCTION

NATIONAL HISTORICAL RADIO CONFERENCE

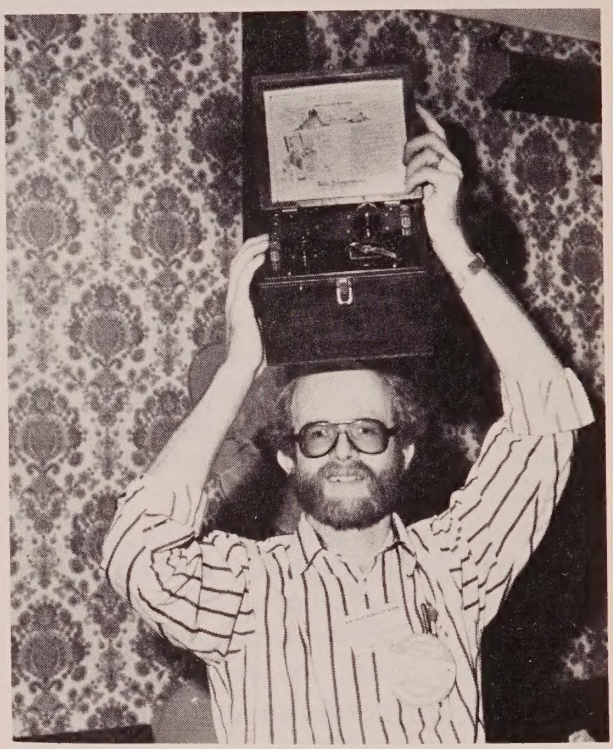
The General Auction again proved to be a stellar attraction with total sales exceeding all previous events. The number of items available was more than usual due to a drizzling rain which brought in flea market members with their wares. Result: time ran out and many articles were not sold.

The smooth working staff averaged a sale every two minutes or less for several hours. Quite an accomplishment for volunteers. Here are some of the results. As in the past, the number is not always indicative of true value.... but will give one a rough idea what equipment is selling for.

(P) indicates Poor condition, (F) Fair, (G) Good, (VG) Very Good, (X) Excellent. All receivers have tubes unless marked (NT) or No Tubes.

RECEIVERS

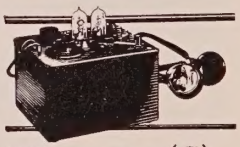
Stewart-Warner TRF w/5 UV-201As-$55., Murdock CS32 (X)(NT)-$150., Garod RAF (NT)-$100., Homebrew with (5) 199's (X)-$50., Bremer-Tully (F)-$30., Dayton XL-5 (NT)(G)-$75., DeForest F-5 chassis (F)-$45., Acmeflex (NT)(X)-$80., Freed-Eisemann NR-6 (NT) (G)-$65., Ozarka w/ spkr (X)-$120., Erla one tube set (X) (NT)-$145., Freed-Eisemann NR-8 (F) (NT)-$35., Thompson Trf S-60 (G)(NT)-$45., Dayfan (G)(NT)-$45., Aladdin Super-5 (X)(NT)-$45., US Apex cathedral (VG)-$60., DeForest D7-A (G)(NT)-$285, Federal #140 (phono-panel)(X)-$120., W.E. 4-B (G)(NT)-$300., BC-14A (G)-$210., RADA (G)-$135., Grebe MU-1 (X)-$185., Marti w/5 410 tubes-$145., Deluxe Freshman Masterpiece (X)-$125., Aeriola Sr. w/brass WD-11 (X)-$175., Aeriola Sr. w/amp. in orig. carton (mint)-$250., Sperry SE-1440 (P)-$300., Remler super (G)-$100., Dayfan console (X)-$80., Kennedy Mod. 30 (X)-$170., Fada 160 (VG) (NT)-$85., Tuska 225 (VG)(NT)-$210., Amrad 3500-1 & 3475 (VG)-$650., AK-10 breadboard (G)-$360., AK-35 (G)(NT)-$35.



Dick Schamberger displays an Aeriola Sr. for bids.....

AK-30 (X)(NT)-$40., AK-35 w/spkr (G) (NT)-$50., AK-33 (X)(NT)-$55., A-K Radiodyne (G)(NT)-$375., Philco 38 (farm rx)(G)-$35., Philco 90 (F)-$95., Philco 20 (VG)-$65., Radiola III (X)(NT) $45., Radiola III w/ tubes (G)-$75., Radiola III-A (G)(NT)-$50., Radiola V (G)(NT)-$200., RCA Regenoflex (G)-$100., Radiola VIII super (G) (NT)-$125., Radiola 60 (G)-$50., Radiola 20(G)(NT)-$80., Radiola X (G)-$150., Radiola V w/amp (VG)-$320., Radiola 17 (G)-$40., Radiola 24 (G)-$155., Crosley cathedral (G)-$50., Cros. Trirdyne (X) (NT)-$65., Cros. 52 (X)-$75 Cros. 52 (NT)(G)-$64., Cros. 51 (G)(NT)-$58., Cros. Pup (G)(NT)-$185., Cros. 51 (X) (X)-$70., Cros. Mod. V (X) (rare)-$180., World xtal set (G)-$50., Homebrew xtal set (X)-$35.,

RADIOLA III—



[Cont. next page]

THE AUCTION

Jubilee xtal set (VG)-$75., Xtal set by Louisville Elec. Co. (F)-$100., Mesco xtal set (F)-$90.

SPEAKERS

Spitfire horn spkr (G)-$35., Bristol Audiophone (G)- $80., Air-chrome spkr. (X)- $50., Magnavox R-3 horn (G)- $75., AK for Mod. 55 (VG)- $25., Music Master (X)- $175., Magnavox R-3 horn (X)- $85., Pathe horn speaker (G)- $100.

TELEGRAPH

"Mac" key (G)-$15., early Vibroplex (G)- $30., Omnigraph (X)- $85., Vibroplex key, Bunnell pony relay & tele. sounder (X)-$85., Menominee key & sounder (G)-$25.

TEST EQUIPMENT

G.R. 740 cap. bridge(G)-$50., Tripolett tube tester (P)-$12., Wheatstone bridge RN-1 (G)-$45., GR wavemeter (G)-$40., Clough-Brengle sweep gener. (G)-$25., Westinghouse port. watt-meter (VG)-$40.,

MISC. EQUIPMENT

Quack medical machine (X)-$25., Universal mike w/stand (G)-$75., Electro-voice ribbon mic. V-1A (G)-$45., Carborundum stabilizing det. unit (G)-$20., 1927 TPTG xmtr w/204A tube (G)-$75.,

4 sets of headphones: W.E., Baldwin, Murdock, & Holtzer-Cabot (G)-$25., Baldwin Type "C" (G)- $22., W.E. phones (G)-$20. W.E. Candlestick telephone (G)-$65., Sig. Corp BC9-A (VG)-$190., DeForest 1909 var. cond. (G)-$135., W.E. 28-B aud. amp. (G)-$50., SCR-74-A WWI spk xmtr (G)-$180., BC-129 xmtr (VG)-$150., 1916 E.I. loosecoupler (G)-$135., McIntosh medico spk-1883 (G)-$200.

SOFTWARE

AK cloth banner (X)-$200., phonograph poster-$20., Rider manuals Vol. 1 thru 7 (X)-$55., "Radiola" display scarf (G)-$210., Bucher's "Wireless Experimental Manual" & "Practical Wireless Tele." (VG) both for $22., E.I. 1914 catalog (F)-$35.

Rules and information for this years's auction will be posted in the June OTB.

Close-Up COLLECTING MAGAZINES ?

Alan Douglas was proud of his magazine collection until he read a note in the April 1925 issue of RadioEngineering magazine written by Milton B. Sleeper, quote:

"There are 67 different radio magazines currently being published."

Alan, you still have an outstanding collection. I doubt anyone will ever claim having all 67 different magazines on their shelves...

ONLY 5 WATTS ?

I just read in Tudor Rees' Newsletter where he sat down one evening in his Bristol, England home, spun the dial on his old Hallicrafter receiver across our CB band (27 mHz) -- in rolled truck drivers, Wildcat Annie, Block-buster Joe and numerous other CB'ers... all with S9 plus signals... with 5 watts ?

On the same subject, one of our members in Australia (name with-held) tells of violent friction among the CB'ers in his country. He relates an incident where two noble members of the clan finally decided to have it out (QRM?). They agreed (on the air) to meet under a certain bridge. Only one left alive. He tells me he doesn't give his true name on the air for fear of reprisal.. So you see.. we're not the only ones with CB problems....

50,000 TUBE PURCHASE

Morris J. O'Brien in Victoria, Australia, recently purchased a stock of WWII surplus tubes -- 50,000 to be exact. His wife (Audrey) almost fainted when the large furniture van parked in front of their home and started to unload ! Although most are of late 1930 and '40 vintage, there were a few earlier types such as 35/51, 47, 57, 58 and 2A5.

TUBES UP !

A commercial listing of vacuum tube sales just came in the mail. Several of our old friends were noted which almost shook the filings out of my teeth:

6J7- $17.40, 6K8- $14.40, 6L7- $15.90 6L6- $24.00 and for that old set of the early 30's: 80 rectifier- $8.00 and '45s at $12.00 each !

It takes guts to quote these prices (but maybe not in a few years). In the meantime, cheerup ! -- you can find the same tubes for 50¢ to $3 (used and un-used) at most amateur flea markets.

[Cont. on page 20]

SOUTH CAROLINA

A.W.A. SOUTH-EAST CONFERENCE, CHARLESTON, S.C., APRIL 18 and 19

Host: WCSC BROADCAST MUSEUM
Headquarters: Holiday Inn Downtown
(125 Calhoun at Meeting)

FRIDAY, April 18
3-7 PM Registration and get-together
7-11 PM Hospitality in Director's Room

SATURDAY, April 19
8-12 noon Registration continues
9-12 noon FLEA market (covered in case of rain). Tour Broadcast Museum
10-11 AM Register equipment for Contests (LewElias, W4DBT Chairman)
Lunch: On your own....
1:00 PM WELCOME by Patsy Hicken
1:15 PM "The LIGHTENING SLINGERS" Lou Moreau, W3WRE
2:00 PM "HISTORY OF FEDERAL RECEIVERS" Dick Schamberger
2:45 PM "This Business of Collecting"
3:30 PM "A 1928 AMATEUR STATION" Wes Chatellier, W5DPM
4:15 PM "RESTORATION TECHNIQUES" Bob Lozier (bring your restoration)
6:30 PM Socializing
7:00 PM BANQUET (Buffet style) (Charleston Room)
8:00 PM ANNOUNCEMENTS and AWARDS Wells Burton, N4EE M.C.
8:30 PM "The WELLSFLEET STATION" Edison Lohr
9:15 PM DRAWING for DOOR PRIZES Dallas Swindal, KA4FVT

LADIES' PROGRAM
Free tours of historic Charleston and Middleton Garden. Sight and shop !

REGISTRATION (single)--------$3.00
Saturday night BANQUET------- 8.00
Total-----$11.00
Special discount for husband and wife registration and banquet-------$20.00

Advance registration, write to:
Wells Burton, Box 73, Summerville, South Carolina, 29483

This the ONLY meet in the south-east this year for historians and collectors. Don't MISS IT ! The date: APRIL 19

INDIANA IHRS

INDIANA HISTORICAL RADIO SOCIETY and ANTIQUE WIRELESS ASSOCIATION
Regional Spring Meet, Saturday, APRIL 19, at Auburn Indiana
AUBURN - CORD - DUESENBERG MUSEUM

Friday, Apr. 18
6:00 P.M. Registration & Museum open
7:30 P.M. "Old Time Movie"

Saturday, Apr. 19
9:00 A.M. Registration & Swap Meet
9:30 A.M. Re-winding antique radio transformers by Ron Scranton
10:00 A.M. - Noon Register equipment for auction and Old Equipment Contest
10:45 A.M. Auction of donated items for Museum Fund. Bring surplus gear.
1:00 P.M. Auction of personal equipment. (10% for IHRS Museum Fund)
4:00 P.M. Contest Judging
4:00 P.M. "Show & Tell" restoration clinic.
7:00 P.M. BANQUET
Old Equipment Awards
Program: AWA "Trials & Tribulations of Laying an Atlantic Submarine Cable."
A rare historical movie made over 50 years ago with modern sound-track.

PRE-REGISTRATION: Banquet reservations with full payment must be received by Apr. 15.
Banquet & Museum admission--$11.00
Adult admission at tne door---- $2.00
Student or child admission----- $1.00

MAIL your registration check payable to I.H.R.S. to: Ross Smith, 1133 Strong, Elkhart, Ind. 46514

Make Motel reservations now at:
L & K Motel, State Rd. 8, West, Auburn, Ind., 46706. Tele. 800-447-4470 or
Starlite Motel, State Rd. 8, West, Auburn, Tele 219-925-0500

Make your plans NOW for a great time. Those who have attended previous meets will receive full program in the mail. Others, write RossSmith....

SEE YOU APRIL 19 !

Del Barrett & Ross Smith
Co-Chairman

AWA CALIFORNIA CHRS

ANNUAL SPRING CONFERENCE CALIFORNIA HISTORICAL RADIO SOCIETY
and THE ANTIQUE WIRELESS ASSN.

SATURDAY, MAY 3, 1980

Foothills Electronic Museum
12345 South El Monte Road
Los Altos Hills, Calif.
(near San Jose)

Activities from 8 A.M. to 5:00 P.M.

SWAP-MEET starts at 8 AM 'til noon

LUNCHEON: Noon - 1:30 P.M.

(Equipment judging during this period)

Programming for the radio historian and collector from 1:30 to 4:00 P.M.

Details will announced on final program.

Contest equipment will be on display from 4 to 5 P.M.

REGISTRATION FEE: $2.00

SELLERS' FEE: Additional $3.00

Registration and information, write:
C.H.R.S., Box 1147, Mt. View,
California 94040

OLD EQUIPMENT CLASSIFICATIONS
for Contest

1. Crystal receivers
2. Regenerative receivers
3. T.R.F. receivers
4. Super-heterodyne receivers
5. Early wireless gear
6. A.C. table models
7. Homebrew equipment (new)
8. Homebrew equipment (old)
9. Tube transmitters

SPECIAL AWARDS:

---Most unique set
---Best of show

This "meet" promises to be one of the TOP gatherings on the West coast this year for the radio collector and historian. Final program will be in the mail sometime in March to all A.W.A. and C.H.R.S. members in Western states. SEE YOU MAY 3!

AWA MINNESOTA

1980 A.W.A. UPPER MID-WEST REGIONAL CONFERENCE
MAY 30 and 31
Fair Oaks Motor Hotel, 2335 Third Ave., So., Minneapolis, Minn.

PROGRAM

FRIDAY (May 30)
1:00 - 4:30 PM Registration and visit to Hennepin Co. Historical Museum.
6:30 - 9:30 PM Open house at Museum of Wonderful Wireless (WØOEP) and late registration at Motel

SATURDAY (May 31)
8:30 AM Registration
9:00 - Noon Flea market
9:00 - 10:00 AM Contest registration
10:00- 11:45 AM Programming for historian and collector.
12 Noon Buffet Luncheon
1:15- 4:30 PM "The Grebe Story", "The Early Years of Wireless", "Marvelous Phonographs" and other programs.....
4:30 PM Contest entries to be removed.
6:30 PM ANNUAL BANQUET
Acknowledgements and Awards
9:00 PM Open House at Museum of Wonderful Wireless

Ladies' Program: Visit to Minneapolis Institute of Arts, 2400 Third Ave. 10 AM to 5 PM (Note: Luncheon available at Institute) Shopping spree in downtown Minneapolis.

Full information on final program, contest classes, and registration, write: Joe Pavek, 2632 Nicolett Ave. Minneapolis, Minn. 55408

(Note: Area AWA members and those who have attended previous "meets" will receive program in mail in early May.)

NEW YORK

May Meeting

SATURDAY, MAY 3
East Bloomfield, N.Y.
AMERICAN LEGION HALL
(About 1 mile east of Museum on Rte. 5)

SCHEDULE:

11 AM Registration, flea market and check-in material for auction

12 Noon Buffet Luncheon.. all you can eat !

1 P.M. Kodachrome slides of 1978 and 1979 Conferences... see action the way it was.....

1:30 P.M. MINI-AUCTION (Bruce Roloson, Auctioneer)

3:00 P.M. Open House at AWA Museum

ADVANCE registration and Luncheon--------$5.50

Luncheon and Registration at gate----------$6.50

Registration at gate--------$1.00

Send check BEFORE April 28 to:
Dex Deeley, 8 Briar Circle
Rochester, N.Y. 14618

Close-Up

[Cont. from p. 17]

COLLECTING SW-3'S

I was listening in on 75 ssb the other day and heard a W1--- tell about a near-by ham who had thirty-seven National SW-3 receivers. Why in the world would one want 37 like receivers ? He couldn't be collecting different models because there weren't that many variations and he couldn't be cornering the market for thousands were manufactured in the 30's.

On the subject of hoarding (?) several years ago I had a neighbor who collected car glass. One day he took me into his basement and proudly showed me dozens and dozens of special built 3 x 4 foot flat stacked drawers full of ancient car head-light lens, tail-light glass and interior glass dome covers.

Out of one drawer he selected a 1928 red Buick tail-light, another drawer a '46 Ford lens and so on... Where did he get all this material and what was he planning to do with it ?

Seems every year he would attend the big antique car show/flea market at Hershey (Pa.) and buy every piece of glass he could find. Objective: to corner the market. He argued that glass did not deteriorate (it would last forever) and the value goes in only one direction -- up! I doubt that my one-time neighbor will ever corner the glass market anymore than the W1 will with his SW-3's....or maybe, he just likes SW-3's.....

FLEA MARKET PARKING

Scene: Lobby of Sheraton, Friday AM Sept. 28 Manager of Inn approaches.

"Kelley, you've got to do something about your members with their wares out in the roadway. They're making it difficult for people driving to the main entrance."

"OK, I'll go out and have them move. I guess some have been carried away and are out too far in the road."

"That's right. There is also a possibility of damage and even injury. This could affect my liability insurance. We would be at fault allowing such a situation.. and while you're at it, how about having them move back from the main entrance so regular patrons to the restaurant can park ?"

End of conversation.

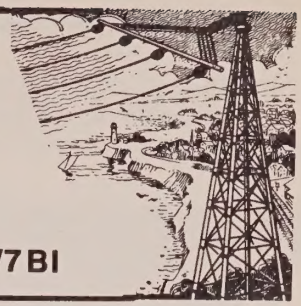
Members were co-operative and moved... however, next year AWA plans to lease an area at the rear of the parking lot for the "flea market". This is common practice with amateur hamfests and will be to the advantage of both members selling and buying...

$20,000,000 For $1

Over a year ago, RCA phased out their large transmitting (Rocky Point) and receiving (Riverhead) stations on Long Island and sold the property to New York State for one silver dollar. A recent magazine article states the property consists of 7,100 acres and is valued at $20,000,000 --- the largest gift ever given to the state. Interesting...

73, B.K.

Arthur Godfrey Meets the Expert



by Howard O. Lorenson, W7BI

When the Naval Research Laboratory was established in 1923, the U. S. Naval simultaneously established its Radio Material school at the same location. Together these two Naval Institutions were known as Bellevue. Here the promising Naval Radio men would receive their instruction in radio theory in the morning and spend the afternoon in the laboratory helping the engineers with building, testing, and operating the new radio equipment.

The Coast Guard was also entitled to a couple of slots in each class at Bellevue. For a young radio man to be selected to go to Bellevue was a sure sign he was an outstanding operator, and in modern terms he had his career made. Here he would work with the engineers on the newest inventions for the Navy.

For one of the early classes the Coast Guard selected a young "White Hat" by the name of Arthur Godfrey as its candidate for Bellevue. Godfrey arrived a few days early and reported to the Commander of the Radio Material School.

Since classes would not start for a few days, the Commander suggested Arthur spend his time looking around and getting acquainted with the engineers. He suggested perhaps first he should go outside the main gate and take the road to the right. At the base of one of the 300 foot towers which supported the antennas he would find a small wooden building called the "field house". Here, he told Arthur, they were working on a new high-powered short wave transmitter and no doubt they would be willing to show him the set and tell him all about its operation.

When Arthur arrived at the "field house" he was met by a man who was busy sweeping up the floor. He had on an old cap and sweater, and was smoking a corn cob pipe. In those days the lab had one janitor and his duties were confined to the main buildings, so the engineers were expected to keep the "field house" swept up. When the man finished sweeping he greeted Arthur with, "I guess they sent you out to see the new transmitter." Arthur nodded in agreement.

The man then proceeded to describe the equipment as the newest master-oscillator power-amplifier type design using screen grid tubes in the amplifier stages, and incidently these tubes didn't require neurtalization like triodes would.

He also said the oscillator stage ran continuously and the amplifier stage was keyed to avoid the "chirp" associated with keyed oscillators. He explained the frequency was maintained to very high accuracy by the use of the new quartz crystals which were temperature controlled.

The antenna system, he explained, was a phased array suspended between the two towers. At the end of an hour he finished his description and Arthur went back to the Commander's office.

The Commander asked Arthur if they had shown him the new transmitter. Arthur replied, "Yes, I don't know what the heck I am doing here; I just had an hour technical description of the Navy's newest development by the janitor! Hell, he knows more about radio than I ever will!"

The Commander laughed and asked Arthur to describe the janitor for him. Arthur said, "He was smoking a corn cob pipe, had on an old cap and a coat type sweater and was sweeping the floor when I came in." The Commander said, "Son, you have just had a lecture from the Navy's Chief Scientist, Dr. A. Hoyt Taylor, not the janitor!"

Ed. note: Dr. A. Hoyt Taylor pioneered in shortwave Communication. Under his skillful guidance as chief of the radio division of the U.S. Naval Research Laboratories, our Navy developed early SW receivers and transmitters.

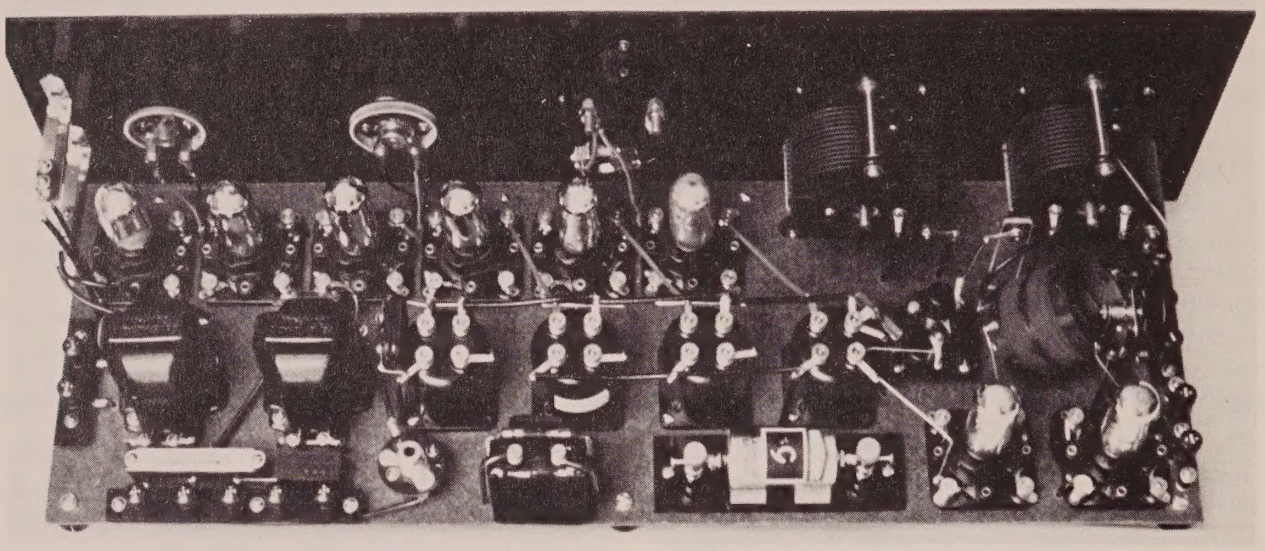
An outstanding example of his work can be found in the May, 1924 issue of QST which describes the operation [and experiments] of stations NSF, NOF and NKF. He established the high standards which has made N.R.L. an outstanding research organization.

ORIGIN OF NAME "TICKLER COIL"

To avoid confusion with various coils in early regenerative receiver, pioneer George Clark in 1915 named the separate coil in the feed-back plate circuit as the "tickler coil" because as he quotes:

"It tickles the audion and makes it quiver."

Best's 45,000-Cycle Superheterodyne



Again, Floyd Lyons tries his hand building an old time receiver. This time, a challenge: an 8-tube superheterodyne.

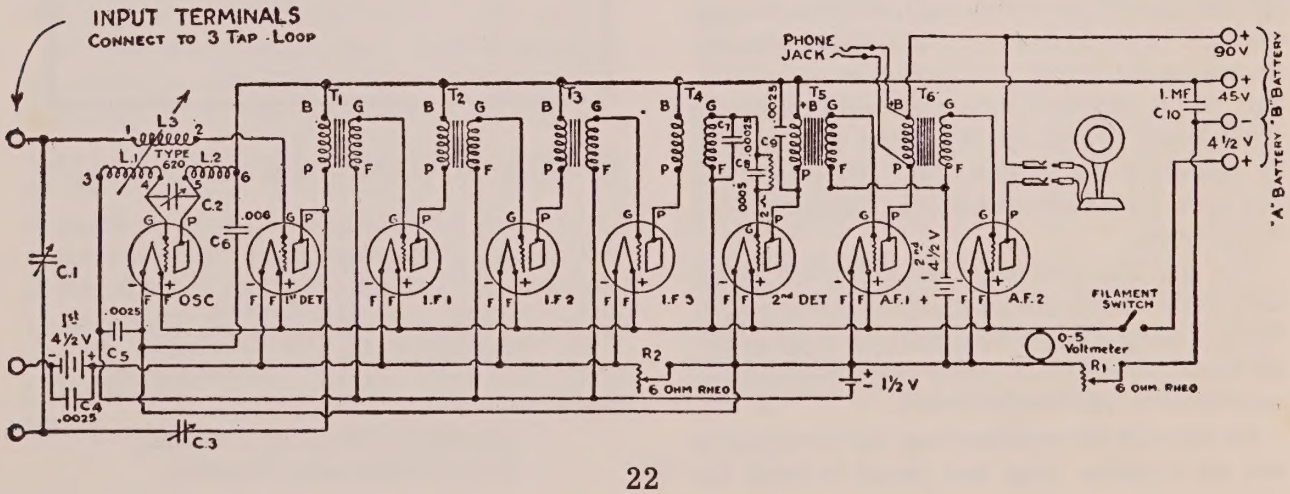
Floyd's original pictures are in color which makes the set most attractive, so much in fact, it won a Blue Ribbon at the CHRS/AWA Foothill Meet last year---Editor.

Along about the time I was getting ready to embark on the superhet project, I lucked into a copy of "Radio News Super-heterodyne Book" (1926) which is really a magazine. I was also lucky to have the assistance of Maurice Stahl, one of our AWA members. His wide knowledge and willingness to give technical assistance, along with other valuable advice, has to come under the heading of "Above and Beyond".

In looking through the Superhet magazine for a workable circuit to build, I had two concerns: to find a circuit I liked and are the components readily available. It was with these pre-requisites in mind the "G. M. Best 45,000 Cycle Super" was selected.

The receiver was about six months in the making -- starting with the planning stage, then locating and acquiring the parts. Next came component cleaning to the point that they looked nice -- but not necessarily like new. The appearance of the completed set is no better than the poorest looking component therein. This was followed by laying out the panel and the baseboard, hole drilling and engraving (the engraving was farmed out to a professional), mounting and wiring.

Three additions/changes were made



that are not shown on the original circuit:

1.) an extra monitor phone jack across the primary of 1st AFT.

2.) a mica condenser (.01) across the "A" terminals.

3.) separate binding post strips-- one for each 4 1/2 v. "C" battery. (Reason: a power pack was used. There was some doubt whether I could obtain the voltage from a common source. To be sure, I installed two different strips.) On the first tryout I used a real "C" battery on one strip and the power source at the other. No problem. I then took a deep breath and hooked BOTH terminal strips to "C" source on the power pack. No difference. So now the two binding post strips are connected as one.

General comments: There seemed to be no simple way of eliminating the separate 1 1/2 volt cell and obtain proper oscillator operation. Also, it was found that 45 plus and 90 plus were not required here in the city. I therefore went with the time-honored practice of using less power -- like 22 1/2 and 67 1/2 volts. If one lived in the hinterland, then a higher potential would probably be welcomed.

The loop antenna I used was a Fada to which I added a center-tap. After initial tryout and the logging of usual local AM stations, I tried for DX. At 10 o'clock that night I was able to add stations up to 800 miles away (KSL, KFI, etc.) Tuning is a major operation with old time supers; almost to the point that one needs a "Special Engineer's License!"

----Floyd Lyons
San Francisco

PARTS LIST

(1) Remler coupling Unit L-1-2-3
(3) Remler 600 IF trans. T-1-2-3
(1) Remler 610 Tuned cir. trans. T-4
(2) Gen. Radio V. C. .0005 mfd. C-1-2
(2) Gen. Radio Aft's, 3 to 1 ratio T-5-6
(1) Weston 0-5 v. voltmeter, Mod. 301
(1) Yaxley filament switch
(2) 6 ohm rheostats & knobs R-1-2
(1) Gridleak (2 to 3 megs.)
(1) "D" cell & mounting (homemade)
(1) Chelton midget var. cond. C-3
(3) Fixed caps. .0025 mfd.
(5) Fixed caps. 1., 01, .006, .0005, .00025
(2) Kursh-Kasch vernier dials for loop tuning and oscillator
(8) Benjamin UV-99 sockets, cushioned
(8) UV-99 tubes
(2) Open circuit Federal phone jacks
(1) Carter phone jack, open circuit
(10) EBY binding posts for "A", "B" and "C" plus center-tap loop

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Notes On The Superheterodyne

Seldom in the field of technical development has there been such a basic invention as the superheterodyne circuit which has never been outmoded or improved upon since its brilliant conception by Major Edwin H. Armstrong during his duties in the U.S. Signal Corp in France during World War I. The basic concept of converting the incoming radio signal to a fixed frequency that could be amplified as required by tuned transformers and providing the desired selectivity made possible a receiver requiring only two tuning controls. It also essentially eliminated re-radiation as compared to regenerative receivers.

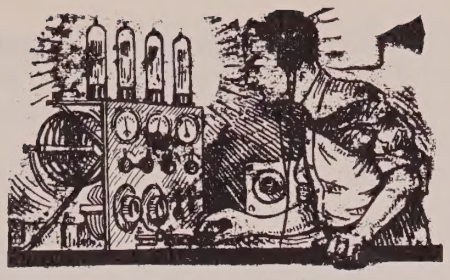
The circuit was available in kit form during the first four years of radio broadcasting but was more expensive to build or operate than the regenerative and tuned R. F. receivers since more tubes were required. The RCA "super" introduced commercially in 1925 overcame the operating cost objection by the use of the low drain 99 type tube combined with reflexing but the high cost prevented its wide acceptance. This high performance receiver was available in both 6 and 8 tube versions and all transformers were potted in a wax filled can or "catacomb".

Nearly all supers built before the advent of the multi-grid tube utilized intermediate fixed frequencies below 100 KHz due to instability caused by capacity coupling between plate and grid in the triodes then available. The development of the multi-grid converter tube permitted considerable gain in the converter stage and the single high gain pentode I.F. stage in the early 1930's made possible the manufacture of very low cost supers, the Crosley Fiver at $20.00 for example, and they quickly replaced the tuned radio frequency sets.

The super was ideally adapted to the introduction of "higher fidelity" receivers after 1930 in which the selectivity could be varied either by a tap on the I. F. transformer winding or by physically moving the primary or secondary to vary the magnetic coupling.

Later developments in commmunications such as TV and Fm utilize the superheterodyne circuit universally and the contribution of Major Armstrong to communications technology is truly beyond evaluation.

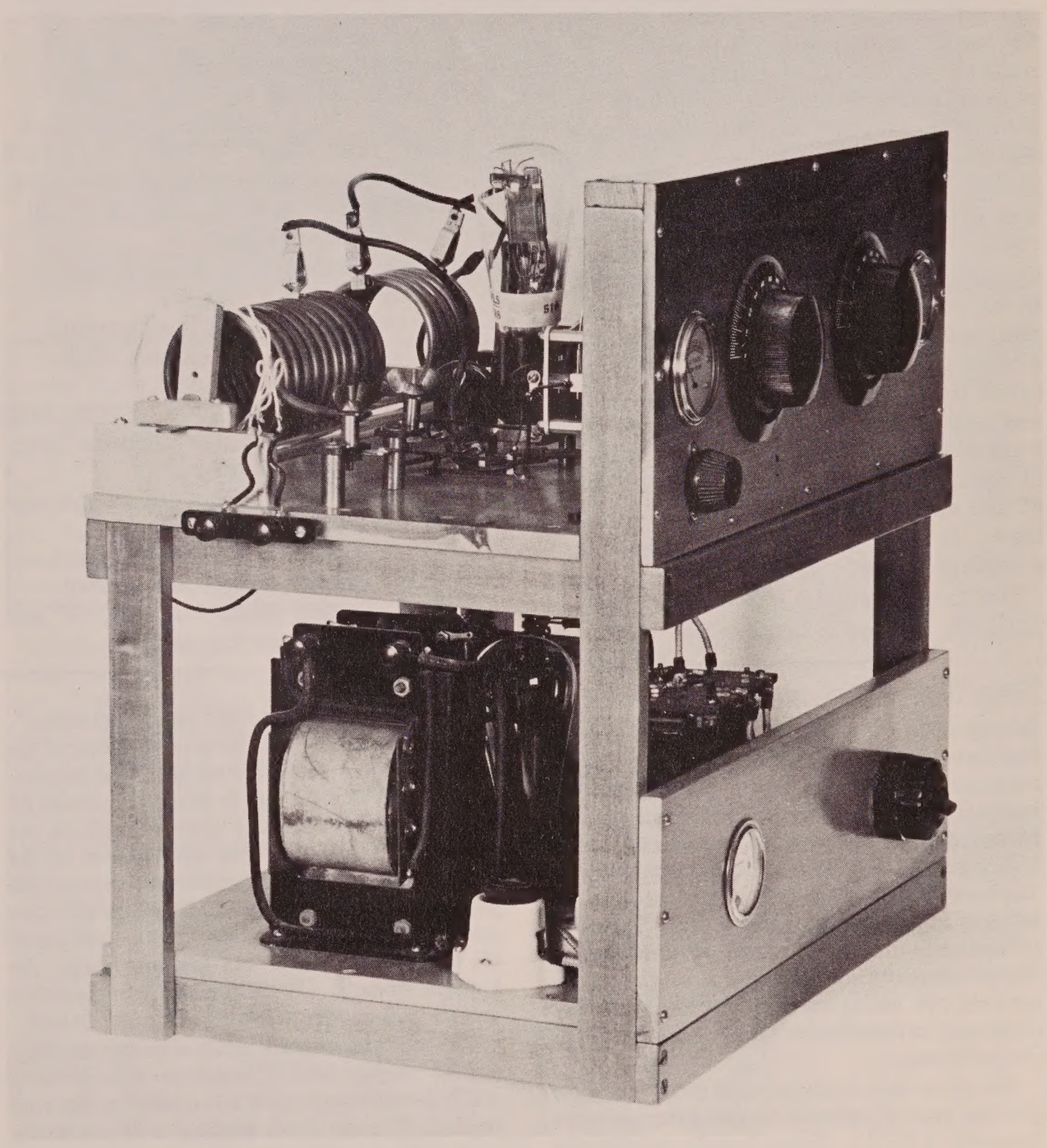
Maurice Stahl



A.W.A. ON THE AIR

Send all old time transmitter construction and operation news to: W2BGN
Ken Gardner
42 Oakdale Ave. S.
New Hartford, N.Y. 13413

A 1929 TRANSMITTER



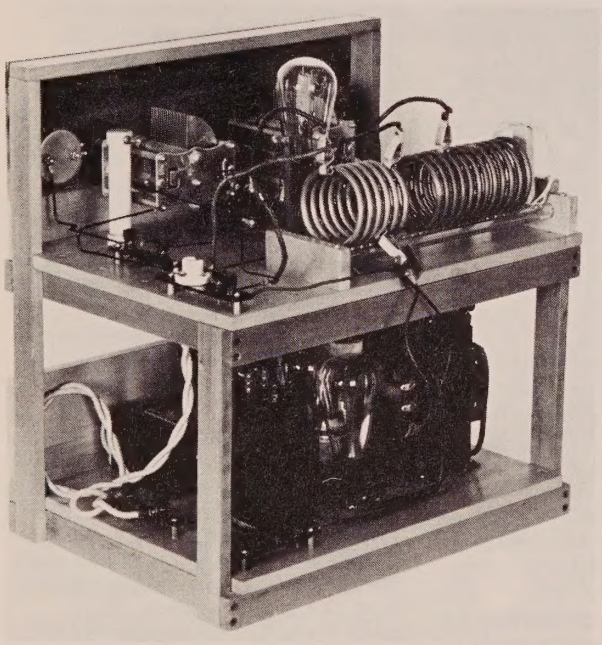
The earliest amateur radio stations were table-top breadboard affairs. This style was easy to build, in-expensive and readily adapted to change as the young experimenter progressed in knowledge.

Receiving equipment, due to its smaller sized components, quickly evolved into beautiful wood cabinets and as the art advanced, into shielded metal compartments with ornate but operable front panels.

Not so with transmitters. The components were larger and subjected to high voltages. They radiated considerable heat as well as RF energy. Some early transmitters were awesome, indeed, at the maximum power level of 1,000 watts -- even after CW tube tube rigs took over from spark.

For these reasons, the breadboard remained quite popular and even to this day, experimenters prefer it although it is more likely to emerge on a metal chassis.

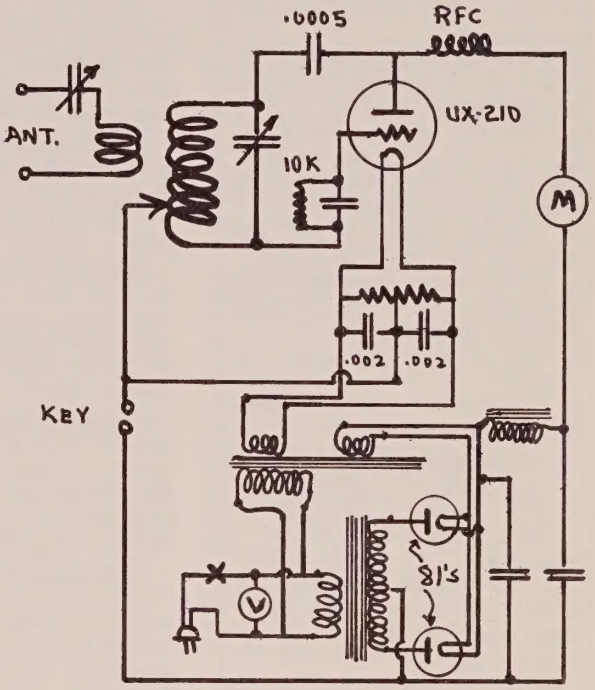
Hams have always admired and coveted the rack and panel or steel cabinets of the commercial designer and sought to imitate them. However, these designs were static and so the ham retained his breadboard and folded it up into various shapes and sizes where he could still make his changes and improvements.



One such transmitter is shown in the accompanying photos and diagram. It was recently acquired by Bill Holly, K1BH, who with Alan Douglas, polished it up and juice to it (Alan is also responsible for the photographs). The 210 type tube puts out according to manufacturing rating, plus the conventional ham's extra squeeze.

The transmitter was obtained in good condition from another collector who purchased it about five years ago from an antique shop in Rockland, Maine. It consists of two units: an RF section with power supply plus the modulator with its power supply (not shown).

The Hartley circuit is assembled according to the ideas Ross A. Hull of QST fame and appeared in the August, 1928 issue. Note the solid and well fashioned frame, heavy rigid coils and the low-loss General Instrument variable condensers. The parts are well placed so that experimental changes in wiring could easily be made if the builder were so inclined.



QST AUG. 1928
BASIC CIRCUIT

Hull's article evoked the expression, "1929 Transmitter" -- which was aimed at new standards of stability and was designed to upgrade the Ham bands from squawks and mush to nice sounding and less QRM producing signals. Crystal control signals were making their appearance, but as of that time, 90% of the hams still used self-excited oscillators.

Bill believes the original builder intended to experiment with phone because not only was there a coil provided in the tank for "loop" modulation, but as noted earlier, there was a modulator using a 27 as speech amplifier and a 250 tube as modulator with a BH rectifier tube in the power supply. The modulator section was constructed along the same lines as the RF section.

K1BH can be proud of his transmitter because it illustrates the beginning of a period of improvement of Ham Radio: 1929 and onward 'til tomorrow!

---W2BGN

OLD TYME HAM ADS

OLD TYME ADS are FREE to members interested in collecting and restoring historical equipment as a hobby. They are not to be abused.

RULES FOR ADS:

1. Ad MUST be written on separate sheet of paper--not part of letter. Send SASE for acknowledgement.
2. Material must be over 25 years old and related to radio or electricity.
3. Give full address and Zip#.
4. AWA will not print repetitious ads or ones indicating regular sale for profit.
5. The Association is NOT responsible for any transaction.
6. AWA retains the right to reduce size of ad if over 8 lines including address.
7. Only ONE ad per issue per member.
8. Deadline for ads is 6 weeks prior to mailing date:

   March issue -- JAN. 15
   June issue --- APR. 15
   Sept. issue -- JULY 15
   Dec. issue -- OCT. 15

Important ! To insure delivery, out-of-state mail should be sent one week PRIOR to dates noted above.

Mail all ads to:

Antique Wireless Assn.
Main Street, Holcomb, N.Y. 14469 U.S.A.

WANTED

--W.E. tubes: 337A, 345A, 351A & 352A, also "Acme 30kc" transformer. Old copies "Bell Labs Technical Journal" & Western Electric "Oscillator". Rodney Schrock, 402 Lincoln St., Somerset, Penna. 15501

--Scott Philharmonic AM/FM model, need service manual Garrard record changer installed in 1937 Philharmonic & H. F. speakers for same set. AM input IF for Scott 800B. P. Best, Box 59, Bridgewater Corners, Vt. 03035

--old meters, test equipment before 1920. Meter catalogs, repro's Ok and info on Weston Instrument company early days. L. W. Cartwright, 21686 Noonan Court, Cupertino, Calif. 95014

--need 8-P-6 power pack for Majestic 180 radio-phonograph. Uses pair of 281's, plug-in ballast resistor.. no interest in other packs using single 280. Need 8-P-6 any condition, please help. Harley Perkins, 2226 SW Main, Portland, Ore. 97205 (503-223-2780)

--Crosley spider web push-pull tuner for Trirdyne receiver. F. W. Sloat, W7AHK, 30808 N. E. Timmen Rd., Ridgefield, Wash. 98642

--Zenith Transoceanic Model 7G-605 Maurice Murray, Rte. 2, Mt. Vernon, Indiana 47620

WANTED

--module plug-in coils for 1934 HRO receiver: Type J, H, G and F (50 to 960 kc.). Also need springs which control gear meshing & read-out of main tuning dial. Robert Ross, Box 4373, Stn. C, London, Ontario Canada N5W 5J2

--AK-82, 558, 387, Federal #24 rheostat, Rada transformer. Trade Radiola 20, Riders, Grimes 6D, etc. Merrill Bancroft, 169 So. Row Rd., Townsend, Mass. 01469

--National coil forms, 6-prong XR-6. Also National impedance coupler S-101, coils & knobs for SW-3 rcvr. D. Sheehan, 15 Arcadia Rd., Andover, Mass. 01810

--Stromberg-Carlson driver unit & base for Mod. 1-A spkr. Also need A-K Type H spkr. and any commercial made crystal sets. G. Michaels, 10 E Ave., Apt. F, Lake Oswego, Oregon 97034

--Crosley CR#1 xtal, xtal detector, 50A, RFTA, experimental units, parts Trade Westinghouse DB for G. E. ER-753 xtal, restorable Zenith 4R plus for Zenith 3R. Art Albion, 440 69th St., Niagara Falls, N. Y. 14304

--schematics and/or manual for Wolper RF-5 battery radio. Free copy of Westinghouse WR-8/WR-8R grandfatner clock radio instruction sheets for SASE. Gary Reif, 117 Pine St., E. Rochester, N. Y. 14445

--inst. manual & large dial knob for Ramway S-28. Loop ant. for deForest D-10. Chassis for Freed-Eiseman NR-20. Any early AK or Radiola manuals or items. Larry Porter, Box 1000 Milan, Ohio 44846

--reward for manual; VLF Signal Simulator. Xerox ok! Also AT-317/BRR loop antenna; brush wire recorder, Telegraphone info. Write: H. Layer, AV-SFSU, 1600 Holloway Ave., San Francisco, Calif. 94132

--cathedral radio- particularly AK or Phiclo. Pay cash or trade collection of old-time TV programs on 16mm film. All in excellent condition. Write for list of titles. David Taylor, 108 Bass St., Tallahassee, Florida 32301

--John Firth Co. (FIRCO) is my speciality. Looking for any sets, equipment, parts, literature or info in any condition. Larry Wright, 131 Hilltop Dr., Lake-in-the-Hills, Ill., 60102 (Tel. 312-658-5993)

--wiring diagram for Raven superheterodyne kit using (8) 01A tubes made about 1924. Lawrence Moser, 3535 S. Clarkson St., Englewood, Colorado 80110

--anything made by Hallicrafter Co. in any condition. Am trying to collect & restore every item mfd. by Hallicrafter. Bud Barber, POB 31654, Aurora, Colorado 80041

WANTED

--info on 4-tube Freshman Masterpiece/built-in horn spkr: tubes, circuit, etc. Also pwr supply for National HF rcvr HRO-M or circuit of same. Ken Forsyth, Box 75, Whitespruce, Sask., Canada SOa4ND

--Viking Valiant, will trade National SW5 w/tubes. Fenton Wood, WB5VXU, 3122 Ann Arbor, Sugar Land, Texas 77478

--tubes types 226 and 201A's.... used ones ok.. also Rider Manuals. R. E. Swinford, 2614 W. Larkspur Dr., Phoenix, Ariz. 85029

--RCA power-audio chassis used in 1926 radio/combos & Radiola 28 AC model. 3 or 4 tube unit ok. See Riders V. 1, p. 485, 506-510. Also want RCA horseshoe magnet phono p/u head. Jerry Newton, Rte. 1, Box 262, Woodland, Calif. 95695

--Crosley Pup.. state condition and price. Harry Braun, 175 So. Main St., Dolgeville, N.Y. 13329

--Power trans. for Radiola 60, pwr supply for AK-36, loop for Radiola 28, Sell Frehsman Mod. N, hundreds of tubes @ 50¢ each. SASE forlist. Bruce Harbeck, 1316-38tn St., Sioux City, Iowa 51104

--set of binocular coils complete for Grebe Syncrophase MU-1. Keith Parry, 17557 Horace St., Granada Hills, Calif. 91344

--have empty cabinets for 1913 De Forest RJ variometer & Grebe AGP-101 (see VR p. 28) Need info, photos or parts to rebuild them. Alan Douglas, Box 225, Pocasset, Mass. 02559

--books/magazines dealing with early amateur radio. State condition & price. H. F. Schnur, 115 Intercept Ave., North Charleston, S. C. 29405

--portables of the 1920's particularly Zenith made in 1924. Bill Berger, c/o Antique Clocks, 29 East 12th St., New York, N. Y. 10003 (Tele. 212-929-1830)

--Clapp-Eastham Mod. ZRF or Radak receivers. Also #26, 27, 71A & 80 tubes. E. Stump, WD8DMY, 122 Reservation Circle, Chillicothe, Ohio 45601

--Stancor audio output trans. No. A-3830 or equiv., primary pp plates to voice coil rated @ 20 watts. Dan Gaidosz, 342 West River Rd., Orange, Conn. 06477

--Radio Broadcast magazine: Vol. 1 &2 (1922-23) all issues, also interested in obtaining later issues. State price/condition. Greg Greenwood, Box 1334, San Rafael, Calif. 94902

--replica of an Arlington or Murdock loose-coupler in good condition and a Murdock enclosed 43 plate variable condenser in good condition. Orin Bake, 603 W. Chestnut St., Oxford, Ohio 45056

WANTED

--tuner/1F chassis for RCA 9PC41 projection TV. Will trade good items for this & other proj. sets. Also need #53 tubes. Don Patterson, 636 Cambridge Rd., Augusta, Ga. 30909

--books: Juvenile radio/electric fiction all types: Radio Boys, Radio Girls, Telegraph Boys, Ocean Wireless Boys, etc. All letters answered. J. Maxwell, W6CF, Box 474, Redwood Estates, Calif. 95044

--all front panel phone type jacks & fila. increase cpntrol for Grebe CR-9 Also need panel knobs & dials & 3 dial string pulleys for Zenith Super VII. Don Sturzenbecher, Box 423, Marion, South Dakota 57043

--old or unusual keys & bugs. Have radios, horn spkrs, set of Riders & indexes to trade. Carl Elkins, AI4P, Nashville, Tenn. 37206

--500-1000 kc. range coil for HRO-W No. J-195 on coil panel. Adivse condition & price. Ken Conrad, W2IIE, 5482 Crittenden Road, Akron, New York 14001

--Thordarson "Standard Amplifying Transformer". Need 2 for Ultradyne L-2. Open winding OK but must look 'A-1'. Also need 3 Sparton type 686 tubes. Bob Lozier, 318 E. Houston St., Monroe, North Carolina 28110

--tuning dials for AK-70 & AK-55. Martin Lumish, 1487 Westview Dr., Yorktown Heights, N. Y. 10598

--WD-11 tubes w/brass base good or open filaments, or later type with good fila. Also replacement AFTs for Stromberg-Carlson 601B & AK-20C or modern interstage aft. William Bresee, 29 Pine Street, Bath, N. Y. 14810

--Crosley items, sets with porcelain tube sockets or wooden book condensers, 1 tube sets, amplifiers, unusual or novelty radios. Larry Babcock, 8095 Centre Lane, East Amherst, N. Y. 14051

--one vernier dial for A-C Dayton Mod. XL-25. A. H. Allison, 5525 20th Ave., Sacramento, Calif. 95820

--socket for a R205-D (p. 287 Saga). Also socket mount or clips for a Meyers RAC-3 Audion (p. 333 Saga). Doug Brighton, Box 158, Hanover, Ontario, Canada, N4N 3C4

--info on "Taylor-Cockaday Ocean Hopper" as in '35 & '36 issues of Radio News. Especially in regards to data on "Radio News SW Converter Coils" Robert Wilson, 4221 Tyndale Ave., Charlotte, N. C. 28210

--dial bezel plate Radiola 17, dial-tuner Philco 70, also name & address collector/dealer antique in South Dakota area. Jon Karstens, 1320 Soto Ct., San Jose, Calif. 95121

--Microphones wanted for broadcast historical archive. Early RCA and Western Electric types sought. Contact James Steele, National Association of Broadcasters, 477 Madison Ave., New York, N.Y. 10022 (#1405) Tele. 212-759-7020

WANTED

--unrestored 6v. battery operated cathedral, Aeriola Sr., Pilot 3"TV, Echophone cathedral, non-superhet battery using '99s. Rick Taylor, 7136 E Lea Rd., Chattanooga, Tenn. 37421

--Allied & Burstein-Applebee Radio catalogs, National SW-54, Nc-57, NC-33 receivers, RCA Victor Service Notes 1938. William Hemrick, Rte. 1, Terra Alta, W. Virginia 26764

--Copies of "Proceedings of I. R. E." (Institute of Radio Eng.) prior to 1950. Forest Baker, 1558 W. Garfield, Davenport, Iowa 52804

--Cabinet for Philco 20 cathedral, manual for Weston 788 tube tester, 2 small vernier knobs for Marlodyne receiver, Roll-chart-thumbwheel & dust cover for Hickok 539-B tube tester, Riders 1, 2, 5& 20-23. Richard Brown, 117 Meisel Ave., Springfield, N. J. 07081

--knobs & control ident. plates for Scott Philharmonic, Radiola IV cabinet, binding posts for 1P-500, any info on Scott Communication set. R. L. Carroll, Box 268, Brookside, New Jersey 07926

--new/un-used 1/4" switch contacts of the '20s, AK breadboard items, especially #3972 iron core rf xmfr, #13 & 14 Wm. Duck catalogs, Sell/swap #11, 15 or 16 Duck catalogs. Sept., Oct., Nov., 1919 QST, Radiola III & IIIA, Crosley 51. Glen Angle, Clear Lake, South Dakota 57226

--Crosley or Ace (Prec. Equip. Co.) parts, panels, book condensers, cabinet nameplates, tags, also want Crosley dealer items: displays & signs. Dave Crocker, Tavern Path, Plymouth, Mass. 02360

--cab. for AK-19, chassis & spkr. for AK-84, cab. for Tuska 228, De Forest D-10 chassis, filament rheostat for Navy receiver SE1420. Al Jochem, 2047 College, Quincy, Ill. 62301

--speaker driver & base with 7/8" hole. Harry Williams, WØ1NI, Rte. 2, Pleasant Hill, Missouri 64080

--Sonatron 3-tube resistance coupled amplifier. Gary Schneider, 6848 Commonwealth Blvd., Parma Hgts. Ohio, 44130

--Paragon DA-2, Panel, tuning knob, cabinet (or parts set) for Clapp-Eastham HR, Federal 110 & Grebe CR-9 parts sets. Have electric/farm bat. set tubes for sale. Rick Weibezahl, 305 Belvidere Ave., Washington, N. J. 07882

--Radio Retailing magazines 1930 thru 1938. Don Knotts, 3158 N. E. Azalea, Hillsboro, Oregon 97123

--G-R Radio catalogs J, P, and T. Pay cash or will trade for catalogs M or R. A. Smith, Stonehedge, Lincoln, Mass. 01773 (617-259-9351)

--set of knobs for Hallicrafter S-27. Info on Apex 7 tube TRF console of 1928, photo, sketches, etc. S. Watkins, 21 Bridge Rd., Parkgate, Southampton Hants, England

WANTED

--info, literature or products of the Sumter Radio Manufacturing Co. for article. Need Radiola Concert, II, VI, VII, Grand, Radio News before 1923. D. A. Swindall, 1112 San Jose Lane, Hanahan, South Carolina 29406

--WWII aircraft reconnaissance TV equipment, especially "Block I" receiver using 7" pix tube. Have cash or AK stuff to trade. Dave Cleland, Box 183, Reinholds, Penna. 17569

--Riders Radio 17-23 plus indexes, AK factory service manuals & AK AC models & pre-1950 tv sets. Jeff Aulik, 803 N. Chicago Avenue, Rockford, Ill. 61107

--tuning shaft with good gear and escutcheon plate for Admiral REP Mod. 6B. Oscar Hager, WØ1AZ, Box 141, Goodman, Mo. 64843

--battery base (box) for a Grebe MU-1. If you have one & don't wish to sell, will pay for photo & sketch. F. M. Lynch, 227 Grosscup Ave., Dunbar, West Vierginia 25064

--shielded can tops for Pilot AC Super Wasp, good condition only. Also need Electrad WW resistor 10,000 to 15,000 ohms, National or Cardwell variables for xmtr. Graham Neilson, 72 Old Mill Road, Toronto, Ontario, Canada M8X 1G8

--tuning disk & printed info, advertising, etc on 1935 Midwest Royale receiver. Tudor Rees, 64 Broad St., Bristol, England BS16 5NL

--UV-886 ballast tube, screw type base; manual & ventilating stack for tube in Radiola 32. Robert Puopolo, 2 Alexander Dr., West Haven, Conn. 06516

--repro deForest Radiocraft dealer sign in four colors (13x19") professionally silk screened on galvanized steel. Price to be determined by qty. sold. Contact: DonPatterson, 636 Cambridge Rd., Augusta, Ga. 30909

--back issues of OTB: buy or swap antique gear for same. M. J. O'Brien 5 Edgar Road, San Remo 3925 Victoria, Australia

READ THIS!

--write legibly: several ads were tossed into basket since we could not decipher writing.

--keep ads short: don't write a story.

--mail ads at least one week before deadline. We can't guarantee mail service. See date-line at end of this column on page 28.

--two separate "ads" not accepted such as a "want" and a "sell" Combine the two into one.

--Play the rules: The OTB Ad Column is the largest of its kind with OVER 2300 readers and 100 entries (106 this issue) and the ads are FREE!

FOR SALE/TRADE

--trade my 2nd Edition ARRL Handbook for a 5th Edition ARRL Handbook. Bill Holly, K1BH, 26 Whipple Rd., Kittery, Maine 03904

--Garrard Mod. RC121/4D automatic record changer w/spindles, papers, etc. excellent & working. $25.00 Greg Dockter, 2519 Avenue A East, Bismarck, N.D. 53501

--Kolster K-43 console and Sparton A.C. console. Cabin ets excellent. Radios not working. $30.00 each. Alex Black, 102 Mineola Drive, Syracuse, N.Y. 13224

--Lee DeForest Laboratories medical macnine "1928" (uses 2-211's & 2-866 tubes in Mopa ckt. $50. Lemco reflex rcvr Mod. 1926 $40. R. Zelenack, 985 W. 3rd Ave., Escondide, Calif. 92025

--custom made AFT to correctly fit inside your original shell for Radiola 111, 20. Also correct for P-P driver or choke output xmfr on Radiola 111A & bal. amp. SASE for more info. $6.25 plus 0.7 lb. postage. Bob Goodman, 7943 Ponce Ave., Canoga Park, Calif. 91304

--ARRL Handbooks 1948-1953-1959 @ $3.00 each plus postage. Lou Hardy, W2QO, 522 Shirley Avenue, Franklin Lkaes, N.J. 07417

--sell/trade Grebe Cr-8, CR-5, RORK, Clapp-Eastham HR & HZ, call books, handbooks, QST's from 1916. List for stamp. Erv Rasmussen, W6YPM, 164 Lowell St., Redwood City, Calif. 94062

--have a Tuska 305 as pictured with Clarence Tuska in OTB, No. 14, June, 1973, page 3. It works well and is clean. Any offers? Arthur Bardish, 4042 Herman Ave., So. Grand Rapids, Mich. 49509

--cabinet: Kellogg RFL, 34" long. Trade: G.E. type 'P' Thomson voltmeter for wattmeter, same line. C. Orval Parker, SR Box 13, Pocono Summit, Penna. 18346

--cathedrals, battery sets, early AC, speakers, medical machines, etc. Sase for list. Want early AC & pre-1930 portables. Mel Rosenthal, 507 S. Maryland Ave., Wilmington, Delaware 19804

--sell/swap WE 5-A repro group minus head. Old homemade receiver and AK rack mount set (neither working) includes (6) 1A & (4) CX-301A tubes (condition unknown). William Love, 5808 Northumberland St., Pittsburgh, Penna. 15217

--Tuska Mod. 301 Superdyne Junior, excellent condition. Want info on RCA Mod. ARB Navy aircraft receiver of WW2. What planes did it fly in? F.W. Chesson, 114 Fiske St., Waterbury, Conn. 06710

--(2) A-K BC receivers No. 7570 and 8000. Grebe Det-Amp/tuner, many parts (some not used), old Qsts and Radio News. SASE for complete list. WØAKW, John Glaze, 3841 Melba Place, St. Louis, Mo. 63121

FOR SALE/TRADE

--Majestic 7 (no cab. gd. spkr) & Sparton 14 (fair cab.) both in poor cond., usable parts, good tubes @ $5. ea. (you haul). Want schematic & manual for Solar Cacap analyzer. Scott Todd, 2911 Simpson St., St. Paul, Minn. 55113

--reproductions of red pushbuttons for late 30's Philco radios @ $6. a set of 8. Send me an original button so I may match the length. W. H. Brams, 2427 Durant #4, Berkeley, Calif. 94703

--selling dupes & liquidating some of collection. Send large SASE with 2 stamps on it for several page list due April. Rick Ammon, Box 54, Evansville, Indiana 47701 (sell/swap)

--trade (3) spark xmtrs: 1 kw with Murdock rotary, WWI Marconi MK. I aircraft set, WWI trench set MKII (2 units) plus large induction coil, BC9A. Want Kennedy 110 plus 525 amp., Federal 61, AK9, CR-8, CR-18 or WWI AX's. Photos $1. D. Spence, D-203, A. N. L., Argonne, Ill. 60439

--Sangamo mico condensers: various capacities from .0001 to .01 These are the famous brown types that were used in many ham xmtrs of the 20's. 75¢ ea. Please include postage. Leo Gibbs, W8BHT, 701 Brookfield Rd., Kettering, Ohio 45429

--AK spkrs type E (fair) $12., Vesta B 200 bat. eliminator $10., parts for Radiola 44, Ak 60 &65, Freshman Polydyne (Mod. N) $15. less tubes. All plus shipping. Tubes 50¢ ea. SASE. Want Type Y pwr. supply for AK36. Bruce Harbeck, 1316 38th St., Sioux City, Iowa 51104

--trade (3) deForest DL-5 tubes for other deForest tubes, etc. W. Hurni, 329 Evergreen Drive, North Wales, Penna. 19454

--trade WE Type 360/4F microphone horn type (mint), Radiotechnic Labs Mod. 55 wire recorder & 44 cans of wire. Want AK stuff & small 1-tube sets. Ron Lawrence, 2334 Westerly Hills Dr., Charlotte, N. C. 28208

--Freed-Eisemann NR-7 & spkr; Fada 175-A. Both very good condition. Make offer. Additional info send SASE. Ben Crane, RFD #1, Box 53A, Harrisville, N. Y. 13648

--deForest replica parts, also one Acme receiver w/3 stages untuned rf, 3 stages of reflex aud. amp. & xtal detector. All xfmrs are good. Nice set for $90. Joe Horvath, 522 Third Ave., San Rafsel, CA. 94901

--197 types of tubes: 01, 1A7, 6K8, 30, 201, 224, etc. Sase or two postage stamps for listing. Want up to a dozen WD-11's & a 6X6 with 6 pins (not octal). Rod Goodwin, Box 1854, Ponoka, Alberta, Canada TOC-2HO

--abridged RCA serv. manuals 1923 to 37 @ $25. 1938 to '42 $16., Ghirardi's Modern Radio Servicing @ $9. postage extra. Sase for list. Write: E. T. Montgomery, 1092 Willowbranch Ave., Jacksonville, Fla. 32205

FOR SALE and/or TRADE

--trade AK-10 breadboard for any three items: Radiola R. S., Aeriola 2-stage amp., Crosley Pup, Crosley 50, Everyman's xtal set, Meepon xtal set. D. Shanks, 115 Baldwin St., Bloomfield, N. J. 07003

--Scott Phantom deluxe w/pwr supply & spkr & orig. manual. Cash offer or trade. Also Simpson Mod. 380 wavemeter/mod. indicator w/ 10-80 coils. Offer? Joe. Panicola, 812 S. Clubhouse Rd., Virginia Beach, Va. 23452 (KA4EAN)

--make offer: Weston Mod. 329 polyphase wattmeter, SX-43 rcvr, brass UV-201 (2), WD-11 bakelite.. swap for old keys. Bruce Burkhardt, Box 1 Royal Oak, Maryland 21662

--trade keys, bugs & sounders for dupes or AC cathedral. R. Cutter, 701 19th, Gienwood Spring, CO. 81601

--trade mechanical TV Orpheus televisor- 20 inch disc in table mod. cabinet with 4" lens. Want early wireless equipment. R. Brewster, 454 Diablo Dr., Pittsburg, Penna. 15241

--tubes, sets, spkrs, WD-11, 99, 01A, etc., horn & cabinet spkrs, a few mint battery sets. Sell/trade for cathedrals, horn spkrs. Also have very rare (1740-1760) early electrostatic generator (glass drum type) to trade. D. Dexter, 151 Hudson St., New York, N. Y. 10013 (212-226-4885)

--Western Union Stock Ticker" Bunnell Universal Ticker 3-A, 22 ohms with glass cover, excellent condition as taken from service. Best offer over $750. Lyle Farmer, Box 653, Marietta, Ohio 45750

--sell/swap 25 issues of Electricians & Mechanics magazine from 1902-1912. Good to mint condition. Guy Martin, Box A, Azusa, Calif. 91702 (W6DLY)

--Riders TV Manuals #1 thru 27, #13 missing @ $140. Have some dupes @ $8. ea. Riders Radio Vol. 6, 7, 8, 9, 11 & 13 @ $8. ea. plus postage. SASE a must. Herman Fothe, 10 Jackson St., Sloatsburg, N. Y. 10973

--sell/trade (2) Webster wire recorders, Mod. 80-1 (near mint) and (2) Lambda regulated power supplies Mod. 28, all $25. ea. plus shipping. James Fred, Rte. 1, Cutter, Ind. 46920

--free: 1922 QSL card replica (one cent postcard). Free for SASE while supply lasts. Royal Mumford, W3CU, 1900 Generals Hwy., Annapolis, Md. 21401

--RBL-5 receiver, 15 to 600 Kc. longwave, 115v. AC, weighs 80 lbs. price: $50. John Wasiewicz, W2DQC 229 Sarles Ln., Pleasantville, N. Y. 10570

MAILING DEADLINE FOR JUNE ADS

--Out-of-state: APRIL 8
--Local: APRIL 15

OLD EQUIPMENT AWARDS

NATIONAL HISTORICAL RADIO CONFERENCE

CLASS I CRYSTAL RECEIVERS
1st- Jim & Felicia Kreuzer
Ste. Indlle Des Telephone -1910
2nd- Burt Noyes, Delaphone (British)
3rd- Gary Schneider-Mark lll (1918)

CLASS 2 REGENERATIVE RECEIVERS
1st- Jim & Felicia Kreuzer
Paragon 10-R-RAS-DA2
2nd- James Spalik, C-E Radak R2
3rd- Bob Lozier, AK #3945

CLASS 3 TUNED RF RECEIVERS
1st- John Caperton
Norden-Hauck Shielded Super-10
2nd- Harry Newell, Priess Straight 8
3rd- John Wiesner, Grebe MU-1

CLASS 4 SUPER-HETS
1st- Dick & Ann Schamberger
National AGS-X
2nd- John Caperton, Melo Heald
3rd- Ted Core, A-K auto receiver #636

CLASS 5 MISC. RECEIVERS
1st- John Caperton, Ritchie
2nd- Rufus Castles, AC Gilbert
3rd- Jim Spalik, Operadio (1925)

CLASS 6 SPARK EQUIPMENT
1st- Ralph Muchow
Dubilier var. tone spark xmtr.
2nd- Will Jensby, Novice spk. xmtr.
3rd- Phil Stoddard, Rotary spark

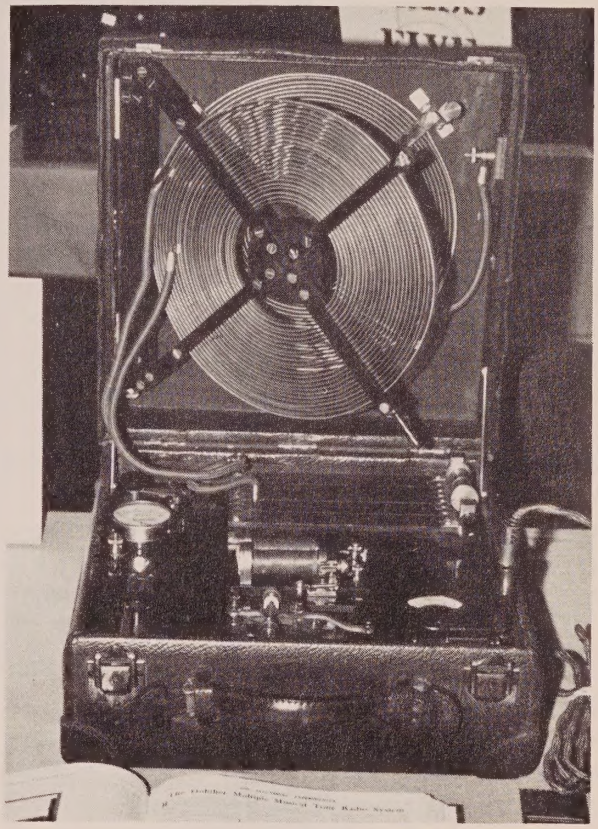
CLASS 7 CW TRANSMITTERS
1st- Ralph Muchow
Complete WE 936 (WWI rx & tx)
2nd-Dick & Ann Schamberger, BC-11A
3rd- Will Jensby, 1928 low power xmtr.

CLASS 8 TUBES
1st- Will Jensby, Moorhead tubes
2nd- Ralph Muchow, Donle Type "C"
3rd- Barney Wooters, Tigerman Detecto

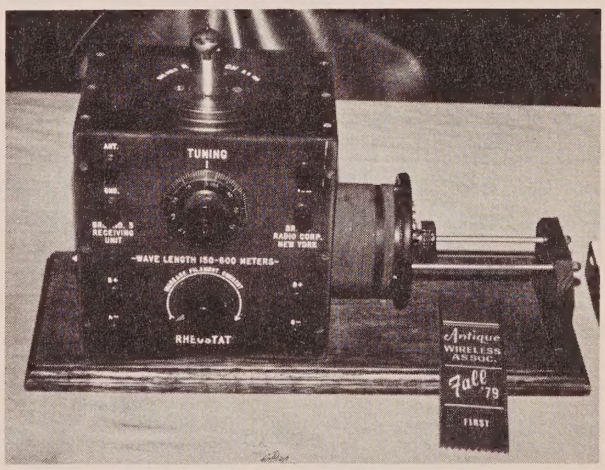
CLASS 9 EDISON CONTRIBUTIONS TO COMMUNICATION
1st- Peter DeAngelo
Edison Home Kinescope
2nd- Ralph Muchow, Edison Bell xtal set
3rd- Walt Smartt, Edison record "Radio"

CLASS 10 EDISON ARTIFACTS
1st- Ralph Muchow, Edison artifacts
2nd- RossSmith, Edison display
3rd- Robert Millard, Edison electrolytic Weber Hour Meter
Special Award- Ralph Williams
Special Award- C. Orval Parker

CLASS 11 DETECTORS & TUNERS
1st- Richard, Mignon Universal Tuner
2nd- Merrill & Rita Bancroft
Clapp-Eastham coupler
3rd- Harry Newell, Grebe 1-tube rf amp.
SPECIAL: Felicia Kreuzer
J. J. Duck Ferron 1909 det.



Winner Class 6



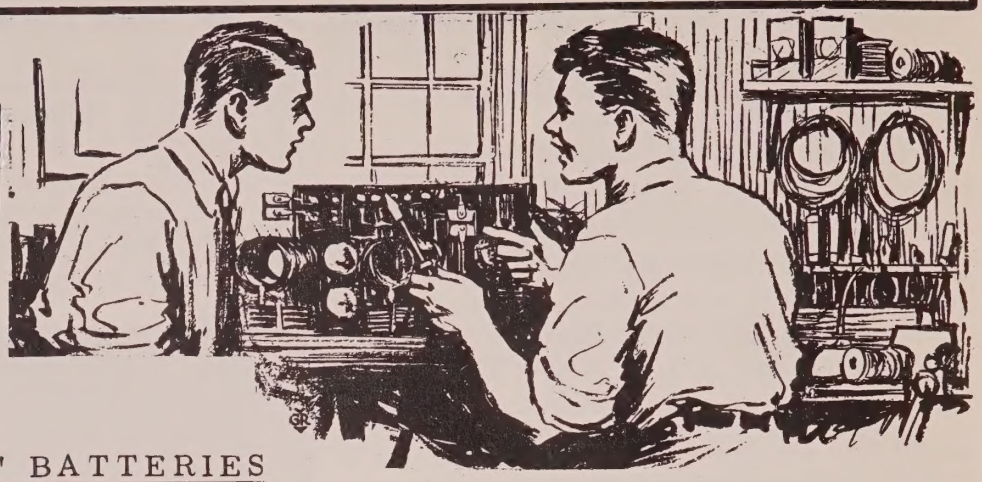
Winner Class 12

CLASS 12 REFLEX & DETECTOR Types
1st- Mark Kaplan, Bruno #3 1-tube regen.
2nd- Harry Newell, DeForest D-10
3rd- James, Moon Model C-2

BEST OF SHOW: Ralph Muchow
Complete W. E. 936 (WWI)

WITH THE COLLECTORS

PROBLEM SOLVERS



MAKING "B" BATTERIES

Anyone have ideas how to restore or make authentic looking 45 volt "B" batteries ? Several collectors, including Bob Lozier, would like to have his old sets work on batteries. The shell on some batteries can be salvaged and new cells replacing the old ones. . but isn't always a successful approach. How about someone printing up the outer paper wrap art-work ? To build a frame for the outer wrap shouldn't be too difficult or making the top. . ideas?

ADVANCED CONFERENCE NEWS

Activities for this great weekend are already being scheduled. The ladies will be glad to know that a trip is planed to the famous Corning Glass Center which has all new exhibit areas.

Collectors can look forward to an interesting dual-projection show on Radiola receivers by Ross Smith. By seeing two views simultaneously, one can note development and differences with ease. Another headliner will be a program on Tuska receivers by Dex Deeley, a subject which little is known. Dex has a large collection of Tuska receivers and has been working with Clarence in gathering his material.

Lastly, the Vacuum Tube Committee is planning their big tube auction Thursday night instead of Saturday. Full program will be printed in the June OTB.

A. R. C. A. ANNUAL SUMMER MEET
Mystic, Conn. May 29, 30 and 31
Programs, auction, contests, etc.
For further information, write:
Bill Denk, 81 Steeplechase Rd.
Devon, Penna. 19333

TIPS ON PHONE CORDS

The Dec. OTB told how to solder terminals on tinsel phone cords. Sherman Wolf (Brighton, Mass.) has come up with another approach -- the use of a shoe-lace tip!

He checked in his local telephone book "Yellow Pages" and found a dealer who stocked the metal shoe-lace tip and the special crimping tool used to press the blank sleeve tip on the wire. You first bare the wire carefully, slip on the metal tip and press it in place with the special tool -- and presto! -- you have a firm connection that will defy any good solder/wire job. Just be sure you use un-painted sleeves.

After examining a couple of his samples I agree, but -- unless you plan to insert tips on a quantity basis, you had better stick to the solder method... C. Z.

BROKEN BAND ON AK-20

If the band belt on your AK-20 is broken, a quick and easy method to solve the problem is to solder small phosphor bronze wire to the pins. The wire is pliable and will do the trick until a replacement band is found.... W3LST

KNOW YOUR TUBES

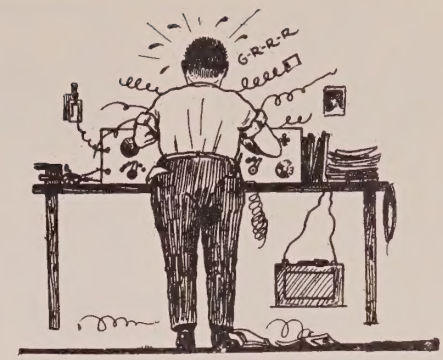
The RCA Tube Type 6949 can handle up to:

.1	watts input
10. 0	watts input
1,000 . 0	watts input
1,000,000. 0	watts input

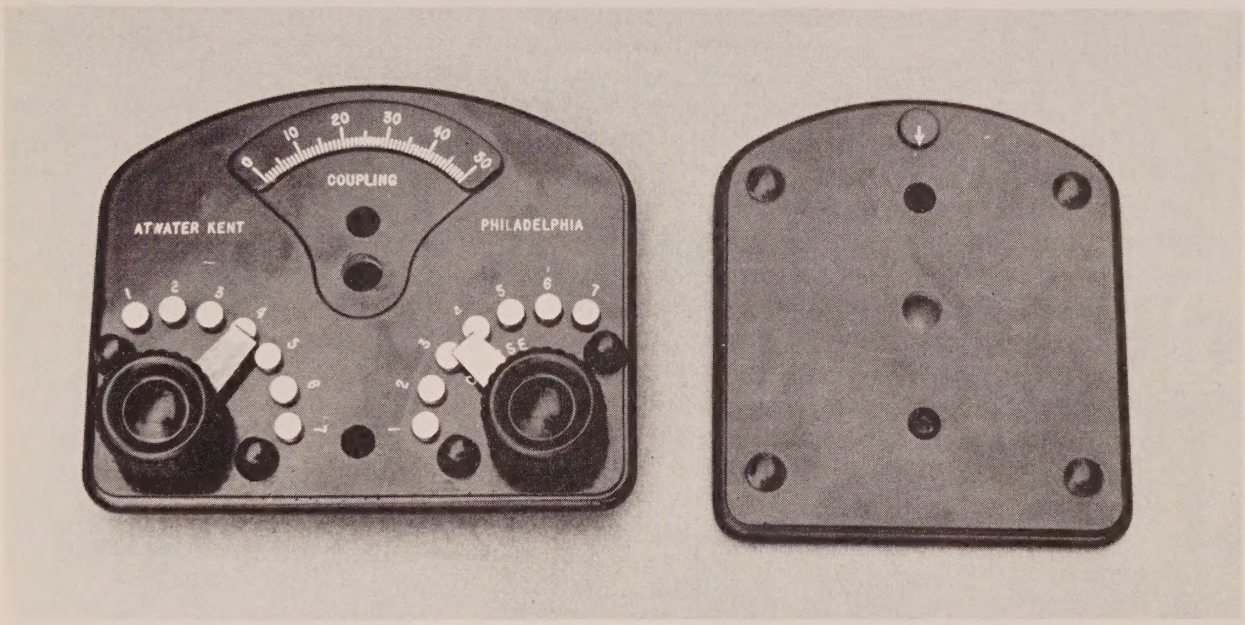
See page 36 for answer

RESTORING OLD EQUIPMENT

How did you SOLVE a problem when re-storing a receiver? Drop us a note telling how you did it.



Reproducing Early Components



Atwater-Kent breadboard plates made by Keith Parry

The average collector restoring an early receiver does not have the know-how or machine shop facilities to re-produce components. Unless he can find a matching knob or related part at a club flea market --the set remains un-restored.

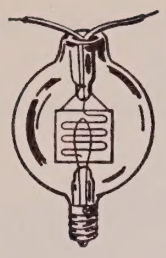
Maybe Keith Parry can help. Since his retirement a year ago, he has built up a fine inventory of hard-to-find parts and is in a position to duplicate most bakelite (plastic) and metal parts.

Parts not in inventory can be made providing you send him one to copy. His prices appear quite reasonable, particularly when you consider present day labor costs plus overhead.(No, AWA does not get a cut on his sales -- we're recommending a service..)

Pictured are samples of his work. Suggest you send him a SASE --he may be able to help you.

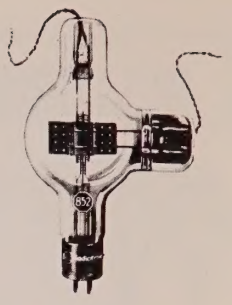
Keith Parry, 17557 Horace St.
Granada Hills, Calif. 91344

Keith Parry reproductions



THE TUBE COLLECTOR

Conducted by Gerald Tyne



MANHATTAN COLLEGE TUBE EXHIBIT

Brother Patrick Dowd, F.S.C., left, stands before one of three exhibit panels which he has devoted to the contributions made by inventor George M. Rose. With Bro. Patrick is Bro. J. Stephen Sullivan, F.S.C., President of Manhattan College where the exhibit is on permanent display in the school's electrical engineering library. (Manhattan College is located in the upper Bronx, N.Y.C.)

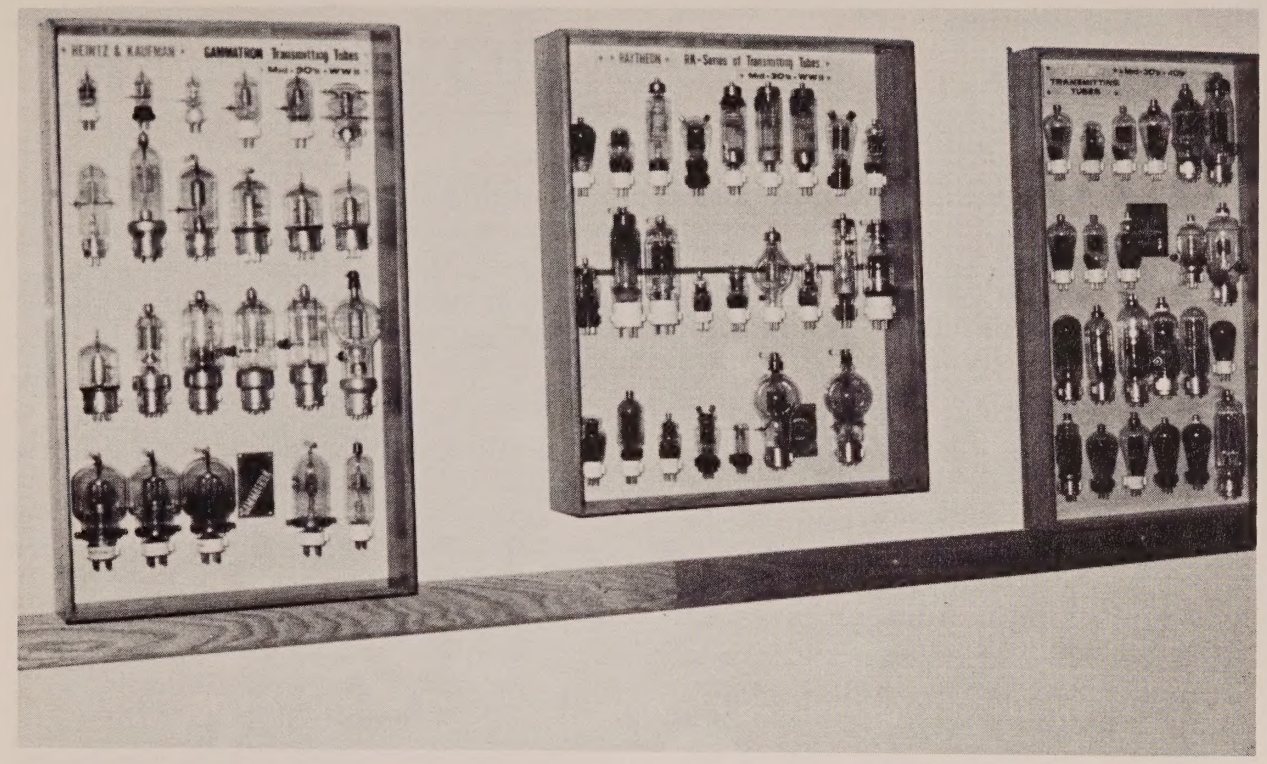
This is a brief report on the vacuum tube exhibit which went on permanent display at Manhattan College last fall. I have reasons to believe it is one of the largest and most comprehensive vacuum tube exhibits in existence.

The originator and donor, Bro. Patrick Dowd, has studied and carefully selected significant tubes manufactured from 1917 to present (American). 25 panels are now on display with an additional 25 in preparation.

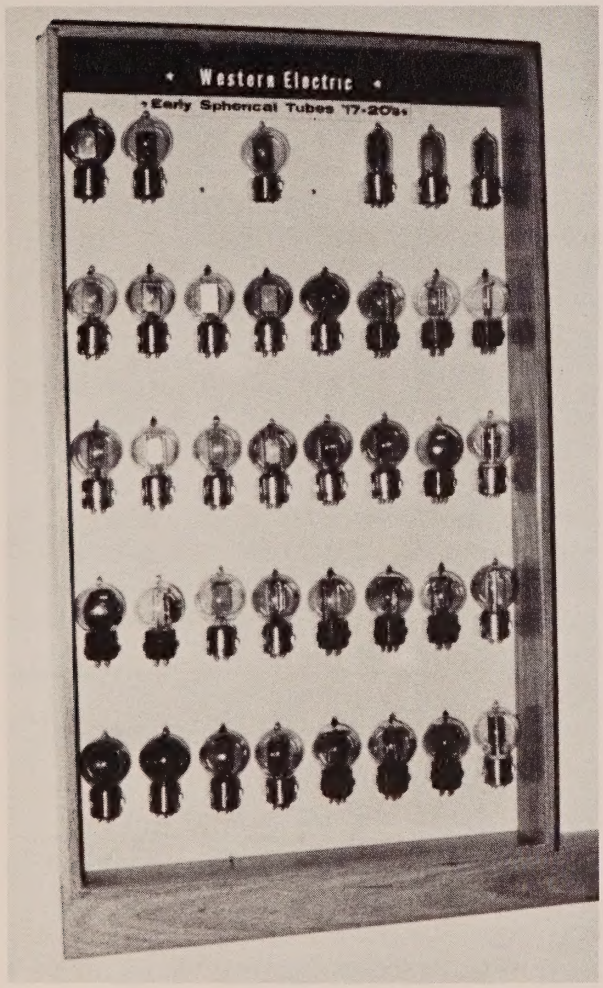
Each panel illustrates the development of a particular type or manufacturer. As an example, one panel is devoted exclusively to the Nuvistor, another to pencil and the lighthouse tubes and so on.

Bro. Patrick recognizes George M. Rose, an RCA inventor whose contributions radically altered the course of vacuum tube technology. Rose was RCA manager of Advance Research and Development from 1940 to 1960. Examples of his contributions are displayed in three panels.

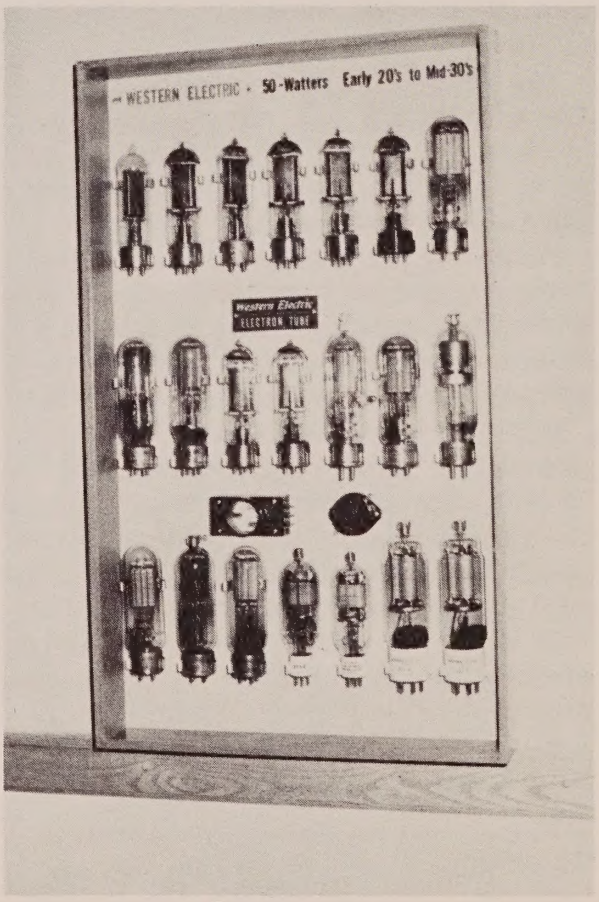
Planning to visit the Tube Exhibit? For directions, write AWA or Bro. Patrick Dowd, Paramus Catholic High School, 425 Paramus Road, Paramus, N. J. 07652 (Tel. 201-447-2717)



Medium power transmitting tubes manufactured by (l. to r.): Heintz & Kaufman, Raytheon Corp. and Taylor Inc.



Panel of early Western Electric spherical envelope types. Each tube is different and displayed in order of development.



Western Electric tubes in the 50 watt class. In addition to hundreds of receiving tubes, there are two impressive panels with 47 Eimac and 46 RCA lighthouse tubes --no two alike!

On Review

ILLUSTRATED HISTORY OF PHILIPS RADIO VALVES

to 1935

by FIN STEWART, Faulcon Bridge, Australia

The author has one of the largest collections of radio tubes and lamps in the southern hemisphere. In addition, he is most knowledgeable on vacuum tube history, particularly non-American types, so it is not surprising he is the author of a historical paper covering Philips tubes.

Working with another well-known tube historian, John Stokes (Auckland, New Zealand), he has gathered what is believed to be the first written history of Philips, a pioneer Dutch-based company with headquarters in Eindhoven, Holland.

The company was founded in 1891 by Gerard Philips, a lamp manufacturer. He was joined by his younger brother in 1894, and by 1899 they were producing 1,800,000 lamp bulbs annually.

Following the lead of several other lamp manufacturers, the company introduced its first radio tube in 1918, and this was the beginning of one of the world's leading tube manufacturers.

Fin's large glossy-page booklet describes all tubes made by the company to 1935. The pictures are sharp making it easy for tube collector identification. In addition, he tells of development and variations in the different types. The last 10 pages list the tubes and their specifications. A note-worthy achievement.

Now for some bad news .

There will be only one printing. Initially, he had set aside only a couple dozen copies for the Philips Company--until he was informed the company wanted several hundred. This limits copies available to AWA and others. Members of the AWA Vacuum Tube Group will have first choice. An announcement on availability will be made in Lauren Peckham's Vacuum Tube Newslette

LIGHTING A REVOLUTION

published by the Smithsonian Institution

This is one of the best buys of the year. It is a large, soft-cover, glossy-page book, full of extremely sharp photographs of early electrical devices: generators, light bulbs, meters, etc.

In addition, the excellent text allows the historian to follow the development of electrical technology from its inception. Dr. Bernard Finn and his staff are to be congratulated. Price: Only $3. Send check to: Museum Bookstore
Museum of Technology
Smithsonian Institution
Washington, D. C. 20560

Radio-Electronics

50th Anniversary Issue

Subscribers to Radio -Electronics magazine had a pleasant surprise last October when they received a bonus: a special insert magazine edited by AWA member Fred Shunaman which gives not only the highlights of Radio-Electronics (1929-79) but all Gernsback publications starting with his Modern Electrics in 1908.

One full color page has the first issue cover of each magazine -- worthy of cutting out and framing. This special issue highlights radio and television development from the earliest days with numerous pictures. AWA is endeavoring to obtain 300 copies to be given at the Annual Conference Dinner in September.

MAGAZINE REVIEWS

"The Hallicrafter Story"
by Bill Orr, W6SAI
Ham Radio magazine, Nov., 1979

"Diversity Receiver Design"
by John Nagle, K4KJ
Ham Radio magazine, Nov., 1979

"Horn Speakers"
by Floyd Paul, W6THU
"CQ" magazine, Dec., 1979

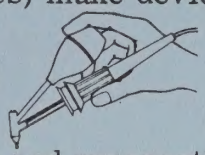
On Review

ALL ABOUT DE-SOLDERING

Hold it ! -- what do you mean de-solder? That's right, there are times when you want to un-solder tap connections when replacing a panel or leads on a small coil in that old receiver.

One of the best articles covering the subject can be found in the November, 1979 issue of RADIO-ELECTRONICS magazine written by Earl Savage, K4SDS. Although Earl's interest is more in terms of removing transistors and other miniature parts from PC boards, the same principles apply to all de-soldering operations.

What fascinated me were the special tools available. Both Weller and Ungar (soldering gun companies) make devices that sucks the heated solder off the connection. These vacuum devices are cleverly mounted at the gun's tip and apparently very effective.



Another trick is to use "de-soldering braid" (similar to outer co-ax cable braid) that soaks up excess solder when heat is applied. Most interesting.

Oh yes, "Radio Shack" also offers a vacuum gun (#64-2085) and Braid as #64-2090.

[Carl Zeigler]

A HISTORY OF ENGINEERING AND SCIENCE IN THE BELL SYSTEM

Vol. 1 The Early Years 1875-1925
Vol. 2 National Service in War and Peace 1925-1975

If you're interested in telephone history you can't pass up these two books. At 1073 and 757 pages respectively, they're amazing bargains at $15 apiece, and just as thorough as the title suggests. Available from Bell Laboratories, Information and Publication Division, Whippany Rd., Whippany, N. J. 07981. Be prepared for a wait and possibly a snafu or two.

HISTORY OF ELECTRONICS A BIBLIOGRAPHY

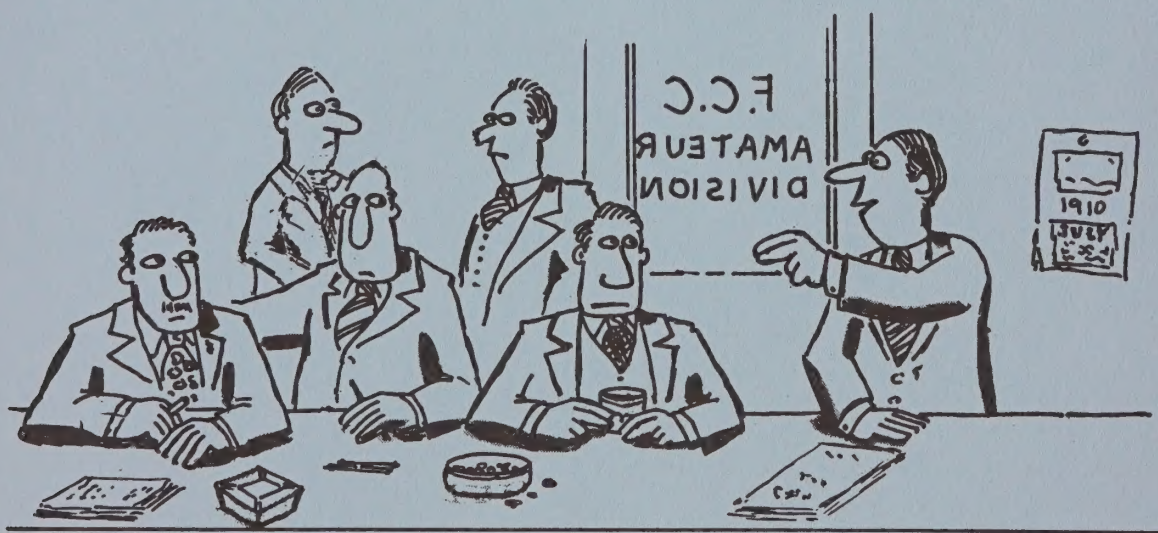
by George Shiers

This book got rave reviews in the June 1973 OTB, is indispensable to any historian or book collector. It gives information on practically every book ever published that touches on electronic history. Still available for $10. 50 from: The Scarecrow Press, Box 656, Metuchen, N. J. 08840

[Reviews by Alan Douglas]

Have you read a historical radio book recently? Write and tell us about it.

"ANOTHER DAY IN WASHINGTON"



"Gentlemen, I propose we allow spark transmitters for amateur operation. It should stimulate new interest for the amateur and industry."

THE MUSEUM

New Equipment
in A.W.A. Museum

W2BSA, W2BJI, W2YE, W2JAV, W2OWF W2IR, W2ROD, W2GRX, W3FNU, W3DUG, WB4ZBK, W4ZM, Alan Douglas, Walter Smartt, Lloyd Jury, Morgan McMahon, E. Gilfillan, Robert Edmonds, George Hertsch, Fin Stewart, Mrs. Howard Schrader

The 1979 Museum season ended with several outstanding gifts:

--Lloyd Jury: A fine library of Edison books and picture

--Morgan McMahon: a large supply of Vintage Radio books for sale in Museum book store

--Mrs. Howard Schrader: a vast collection of early developmental X-ray, Tv and radar tubes.

The Association plans to have two special displays this year: The Howard Schrader Tube Exhibit and the Willonberg 1907-13 Amateur Station. More later.

PARTS AVAILABLE FREE

AWA has a large inventory of transformers, capacitors, resistors, sockets and even tubes available to members without cost. You must select and pickup -- absolutely no delivery. Most items are of 1930-40 vintage, however, there are some made in the '20s. Limited quantity per member... thanks to: Dr. Cy Staud (K2DQ), Orv Potter (WB2FPT) and Joe Marsey (N2JM).

A.W.A. HISTORICAL MUSEUM

East Bloomfield, N.Y.
Bruce Kelley, Curator

Museum Hours:
Sunday ——— 2 to 5 P.M.
Wednesday ——— 7 to 9 P.M.
May through October

Open to groups by appointment
Tele. (716) 657-7489

Free Admission

Museum Telephone:
(716) 657-6260

KNOW YOUR TUBES
The answer is 1,100,000 watts !
(see below)

RCA 6949
SUPER-POWER BEAM TRIODE

The 6949 can handle 1,100,000 watts max. input per tube. Typical CCS rating Class "B" linear output is 600 kw. with 18,000 volts @ 57 amp. on plate. Printed below is RCA tube specs.:

LINEAR RF POWER AMPLIFIER—Single-Sideband Suppressed-Carrier Service

Crest of modulation conditions

Maximum CCS● Ratings, *Absolute Values; for Altitudes up to 5000 feet:*

	Up to 75 Mc	
DC PLATE VOLTAGE	20000 max.	volts
MAX.-SIGNAL DC PLATE CURRENT	60 max.	amp
MAX.-SIGNAL PLATE INPUT	1100000 max.	watts
MAX.-SIGNAL DC GRID CURRENT	1.5 max.	amp
PLATE DISSIPATION (Average)	400000 max.	watts
Typical CCS Class B Values at 10 Mc:		
DC Plate Voltage	18000	volts
DC Grid Voltage (Approx.)*	-300	volts
Zero-Signal DC Plate Current	5	amp
Effective RF Load Resistance	170	ohms
"Single-Tone" Operation:⊕		
Max.-signal dc plate current	57	amp
Max.-signal dc grid current	0.350	amp
Max.-signal peak rf grid voltage	1900	volts
Max.-signal driving power (Approx.)	10000**	watts
Max.-signal power output (Approx.)	600000	watts
"Two-Tone" Operation:◆◆		
Average dc plate current	37	amp
Average dc grid current	0.220	amp
Peak envelope rf grid voltage	1900	volts
Average power output (Approx.)	300000	watts
Peak envelope power output (Approx.)	600000	watts

(Note: This tube is not recommended for amateur or CB operation...)